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The Crisis in Beekeeping

By W. H. Hull,
Virginia.

MANY perhaps will disagree, but I feel very strongly that the beekeeping industry is at the crossroads. From the point where it now is, or thereabouts, it will either develop into a firmly established, well organized and steadily growing business, or it will settle back, for a period, into its former status, supported by loosely organized bands of hobbyists in which the commercial honey producer is an exception.

There may be a difference of opinion as to which of these two courses is to be preferred. In the main, it is beekeeper vs. honey producer, using Mr. Pellett's apt distinction in his January "Postscript": "When a man reaches the point where he is no longer primarily interested in bees for what he can learn about them he ceases to be a beekeeper and becomes a honey producer."

It is clear that **beekeeping,** as thus defined, is not and never can be a business proposition. The interest is in the bees. Wherever business crops up it is given second place. Yet honey is produced and must be disposed of. It might be given away. Frequently it is. At the same time bees, however interesting, cost money and few beekeepers are opulent enough, or have wives philosophical enough, to permit them to disregard entirely the proceeds from honey. So they sell the honey. And being out of touch with the market, with no established trade and no great interest in the business anyway, they are easy marks for the buyer.

Right there they clash with the honey producer, who **must** make his business pay, or lose it.

Not all small operators are **beekeepers** according to Mr. Pellett's definition. Many keep bees for honey only. It is these who make the most trouble in the long run. Your real **beekeeper** is a student, not only of bees but of bee lore. He reads, among other things, the current bee journals. The small honey producer too often reads nothing about bees, seldom sees a bee journal, knows nothing of the latest developments concerning bees and honey.

The genuine **beekeeper** is pretty likely to be a philosopher and a gentleman—could scarcely be otherwise. Our small honey producer is usually a gentleman, too; but being less of a student and philosopher he has a narrower view of the subject, a vaguer idea of why things are as they are. Also, when he goes out to sell he is confused and a little bit frightened by the unfamiliar things required of him by his job. Result: he parks his gentlemanly qualities in some safe place and adopts the strictly dog eat dog policy, as C. L. Corkins expresses it. Being a pretty good dog eater he muddles through somehow, although with several bites taken out of him, financially speaking, and with an uncomfortable attack of ethical heartburn as the after effect of his own dog-biting. It is this sort of thing that the codes are designed to remedy.

Against the code idea the chief argument is for "rugged individualism" — the survival of the fittest. That is fine for those who survive. Under primitive conditions it was, presumably, the strongest and bravest who survived. Even so the plan could not have worked too well, since we find some form of communal ownership practiced by nearly all primitive people. Among us such "fitness" would consist of ability to make money—by no means the highest or finest trait in human character. Rather far from it, I should say. Before insisting too much on this "rugged individualism" we should remember, I think, that while the fittest survive, the less fit—including many of the finest characters in other respects than money making—go down to destruction.

On the other hand, again, the really unfit must be eliminated some way. Wherever communal theories have been put on a practical basis this elimination has been carried out deliberately, either by severe tests, as among the American Indians, or otherwise, as, for example, in Soviet Russia; but always with absolute ruthlessness. Such a plan would be intolerable to us. Yet there is a limit to the number of weaklings that society can support. Perhaps rugged individualism is for us the best system, letting nature do the eliminating in her own way. Yet as a nation we have just rejected this plan as being too harsh, and I believe we were right in rejecting it, not because of any inherent weakness in the system, but because of the exaggerated importance that wealth and the knack of acquiring it had assumed in our social and economic life. Remove wealth from the throne, curtail some of its power, and we can go back to individualism rugged enough to suit the most exacting.

But let's get back to beekeeping now. In his report on the beekeeping code, Mr. Corkins points out: "The honey marketing agreement won't sell our honey. It only says we shall sell it like gentlemen."

While such a code would not exactly force the small honey producer to read the bee journals, his kind would need a lot of help such as only a good bee journal can give. The better informed beekeeper, when

the necessity for "selling like a gentleman" is pointed out to him, will not object too much to the extra effort required to sell in that manner.

Under present conditions the whole burden of keeping prices up to a fair level rests upon the commercial honey producer. A code would put a fair share of this burden on the **beekeeper** and the small honey producer.

Since other industries and other branches of the beekeeping industry have codes, I suggest that in case we do not succeed in getting a code for honey we formulate a gentlemen's agreement of some kind among as many of the craft as can be rounded up for it. If the codes prove successful there is no doubt that we will have one eventually. If they don't, we won't want one, and we may still keep our gentlemen's agreement.

Queens in the Packages

L. T. Floyd brings out a good point in his March comments about package queens when he suggests the possibility that packages that kill the queen accompanying them may do so because there is a queen loose among the bees. We have found that true. Leave those apparently queenless packages alone and you may find brood in them a little later. Not always.

Plans for Marketing Agreement

At the Minneapolis meeting of the League and Institute it was voted to continue negotiations for a Bee Products Marketing Agreement. The committee in charge feels that the efforts of organizing the industry must rest on the beekeepers. Many beekeepers have told us that they are willing to help. The Agricultural Adjustment Administration has assigned Mr. Lawrence H. Sample of the Food Products Section to our case. The Code Control and Records Section of the Agricultural Adjustment Administration has furnished a legal form which enables members of beekeeper's organizations to authorize a member of their organization to represent them in negotiating an agreement with the Secretary of Agriculture.

To proceed with the formulation of a code it will be necessary to have the signatures of 65% of the volume of honey produced. If this project is to materialize beyond the stage of correspondence and conversation, it is necessary that beekeepers sign these proxies and send them to their secretary, who will forward them to me.

Whether or not a code is adopted, it is essential that every effort be made to increase membership in the associations and in the American Honey Producers' League, so these organizations will be truly representative of the volume of bee products entering commerce. The entire agricultural industry, of course, is being subjected to scrutiny at Washington.

Beekeepers must realize that they must either organize and by orderly methods protect their interests or drift and make the best of it, and it is only by organization that beekeepers can get recognition in a showdown.

The Agricultural Adjustment Administration has requested the following information from members of beekeeping associations for 1931, '32 and '33: (1) Number of colonies of bees each period; (2) Pounds of honey produced each period as (a) comb, (b) extracted, (c) cut comb; (3) Pounds of beeswax produced each period; (4) How the honey was disposed of each year: (a) in wholesale or bulk packages, (b) in retail packages; (5) How the beeswax was disposed of: (a) in bulk, crude, (b) refined, (c) in exchange for foundation.

This information should be forwarded to your association secretary or to this office.

R. H. Kelty, Secretary Code Committee, Lansing, Michigan.

Copies of the Authorization blanks to designate an agent from an association to represent it in the formulation of the code may be obtained from Secretary Kelty at the address given.

Our Cover Picture

This month's cover shows a very typical view in the swamps of the Gulf Coast. Spanish moss hanging to the trees offers an unusual and never to be forgotten picture to one who is unfamiliar with it.

It is in such regions that the tupelo is at its best. Wonderful honeyflows come from tupelo but in many of the best tupelo locations there is so little pollen available after the close of the tupelo bloom that bee men must move their bees to distant pastures in order to keep them alive for the next harvest.

Tupelo honey is in special demand because when unmixed with honey from other sources it will not granulate. By adding a portion of tupelo honey to honey which granulates quickly, the process is greatly delayed and thus the product is easier to handle in the market. Beekeepers from the northern states will greatly enjoy a visit to the tupelo regions of the South.

Let's Rename the Disease

The word "foulbrood" seems crude and frequently offensive to the person unfamiliar with the disease. It conveys the idea of filth, and when mentioned to our honey-eating customers (who usually consider the honeybee the cleanest of insects) it has a tendency to deter them from eating honey. A suggested name, "Bacillus larvae," could be used without conveying to the casual honey consumer the thought of impurity.

No one knows better than I what a dread disease this American foulbrood is. Well do I remember the state inspector's visit to my apiary several years ago. Every hive was condemned; we eradicated with fire. Now every colony in my apiaries is free of disease. Every beekeeper must be made to realize the severity of the disease without applying a name to it which suggests filth.

Howard Greene,
Texas.

They Will Choose Such Places

O. G. Nelson, of Bethany, Missouri, sends this picture of a swarm on a gate post taken at 6 A. M. last May. Ever try to get one off the post?

Many swarms will not stay hived unless the queen is in for sure. The beekeeper must see to that. So a swarm on a post is a little difficult to handle. Sometimes a comb of brood leaned against the swarm will induce enough of them to cluster over on it so the comb may be placed in the hive which the bees are to occupy. A second comb will remove still more. Sometimes then, the hive placed right among the bees with an entrance so situated, that the remaining bees can be smoked or brushed off, will finally locate the swarm in the hive without undue excitement which might cause the bees to decamp and try it again elsewhere. Possibly too high to reach.

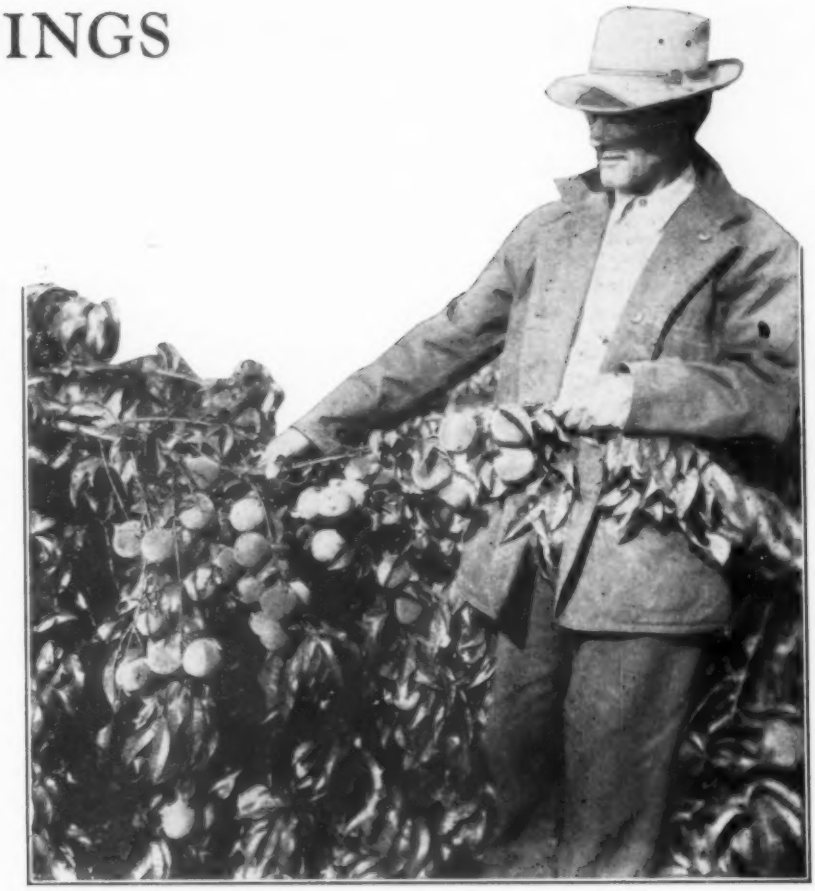
FAMOUS SAYINGS

May—

B*urt found n*O *studie*S
F*or* H*is* K*e*N

"Bees Hurt No Kinds of Sound Fruit"

—Aristotle over two thousand years ago.



No Better!

ONLY five answers this month. What's five out of several thousand? Let's see more of you try next time.

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The two firsts.

Here are the best answers, two of them; so good the only fair thing is to give each his choice of books to read, the prize that goes each month to the winner.

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Here is one of the two best answers. This one from Wm. Hassler, Princeton, Illinois:

" 'Bees hurt no kinds of sound fruit, but wasps and hornets are very destructive of them,' so remarked Aristotle over two thousand years ago.

"Many times bees have been accused of eating grapes, but the main damage is done by birds, wasps and hornets. Whenever a crack or spot of decay is seen, however, the honeybee hastens to help itself on the principle of 'Gathering up the fragments, that nothing may be lost.'

"You can put a colony of bees in a cage with sound fruit and they will starve as they cannot puncture the skin on the most delicate fruit. The mouth of a bee has jaws that move sidewise like those of ants and other insects, instead of up and down. These jaws are thick, without teeth and beveled inside to form a hollow when joined together. With them they manipulate the wax to build their comb and use them to drag out other bees and debris.

"Wasps and hornets secrete no wax, being furnished with strong saw-like jaws for cutting the woody fibre with which to build their nests, can easily penetrate the skin of the toughest fruit.

"While honeybees are regarded by the best informed horticulturists as friends, a strong prejudice has been excited against them by some fruit growers who complain that bees feast on their choicest fruit.

"That bees do gather the sweet juice when nothing else is to be found, is certain, but it is also evident that their jaws, being adapted chiefly to the manipulation of wax, are too feeble to enable them to puncture the skin of the most delicate fruit."

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The next and second of the two prize winners of the month is from Chas. N. Jones, Canaan, Maine.

" 'Bees Hurt No Kinds of Sound Fruit'—Aristotle the author of this saying was one of the greatest of the Greek philosophers and teachers. He lived in the fourth century B. C. when Greek culture was at its height. Aristotle wrote on many subjects, both literary and scientific and earned the title of 'The master of those who know.'

"That he was a close observer is shown by the fact that many of his sayings still stand after twenty-two hundred years. He was acquainted with the different races of bees and knew more of their habits than some beekeepers of the present time. Much of his knowledge of the world outside his country was gained through expeditions of Alexander the Great, who was a pupil and close friend of this great teacher.

"Bees often suck the sweet juices from damaged or over ripe fruit and for this reason they have sometimes been condemned as causing the injury to the fruit, but they have no teeth or jaws capable of puncturing sound fruit, and will only gather the juice when there is a scarcity of nectar, and only when the skin of the fruit has been broken by other insects or by other injury.

"As a winter food, such juice will usually cause the death of the colony. Recently a beekeeper told me of a neighbor who fed his bees sweetened fruit juice to produce honey cheaply. He lost all his bees early in the winter.

"Most orchardists now realize the value of bees for pollinating the bloom. Only the other day I asked a farmer about putting a few colonies at his place. He replied to bring all

I wished but he would like to have them there by the time fruit trees blossomed."

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Robert C. Fowler, Freeport, Illinois:

" 'Bees Hurt No Kinds of Sound Fruit.'

"Many times bees are blamed wrongly for work done by other insects with cutting jaws, yellow jackets, birds or weather which cause the first break and then the bees suck the pulp, when there is no better nectar available.

"In September 1908, Joel Gilfillan, of Newark, Delaware, put a three-story observation hive with combs of bees on exhibit at the Wilmington State Fair. In the third story was hung a peach, a pear and a bunch of grapes. These were on exhibit during the fair and the fruit was never once visited by the bees. A card in the hive read — 'Bees do not injure sound fruit.' This fact has long been known by fruit growers and the damage bees do to already injured fruit is repaid a hundred fold by the indispensable service they render in the pollination of bloom in the spring."

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A. D. Wood, Boise, Idaho:

"Mr. Frank Benton of the U. S. Dept. of Agriculture has quoted: 'Bees never puncture sound fruit.' In 1931 we had a yard near a vineyard. We were asked to move the bees as the owner said the bees were destroying his grapes. We tried to reason with him but we had to move to a new location.

"On the next trip to the new place, we were met at the yard by another party with the same trouble. We explained that the injury was caused by the Cape May warbler and other birds entering the vineyard about daybreak puncturing the fruit, the bees working on it later. We agreed to screen the bees since there was no nectar coming in.

"The next day we went to see how things were going but the fruit grower complained there were as many bees as ever. We called his attention to another apiary some distance away but he said that our bees were causing injury to the pickers because of stings so we moved them again.

"So while bees hurt no kind of sound fruit, they may hurt the picker or the grower and we should look at his side. I am sure if we were in his place, we wouldn't want the bees annoying us. If we know it isn't our bees doing the mischief, we have peace of mind that we have done all we could do. Let us keep peace."

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W. Ewart Dudley, Blencoe, Iowa:

"Mother Fruitgrower went to the orchard to get a basket of peaches but spying a small group of lusty bees sucking contentedly on a peach rushed back to the house, excitedly exclaiming to Daddy Fruitgrower, 'You better come, quick, bees are damaging the fruit.'

"So Daddy went to the orchard and after seeing the devastating onslaught left his wife staring at the busybodies while he went to threaten Mr. Beekeeper.

"Mr. Beekeeper listened contentedly while Daddy Fruitgrower exploded his bombshell of threats and then advanced the contention that the bees were working on injured fruit.

" 'Injured fruit, my hat!' spat out the indignant Daddy. 'It's sound fruit they're damaging. Let's go and see.' So they went. 'There! see for yourself,' said Daddy. They hunted together for other evidence of destruction but found little and Daddy boasted, 'We caught 'em just in time. They're only getting started.'

" 'Listen, neighbor,' smiled Mr. Beekeeper, 'experiments have shown that bees do not injure sound fruit. It is only when the skin is broken by birds, wasps or in some other way that the bees suck the fruit juices.'

"Daddy Fruitgrower could not dispute the evidence, and was relieved when the wise beekeeper remarked about his splendid crop.

" 'Best I ever had,' said Daddy.

" 'Thanks to my bees,' smiled the beekeeper.

"The puzzled expression on the face of Daddy gradually cleared and smiling he said: 'Strange I never thought of that before, I'll send you over a basket of peaches when I pick them tomorrow.' "

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A Late Answer for May

H. D. Alexander, Priest River, Idaho:

"I am a new subscriber and nearly overlooked 'Famous Sayings.'

" 'A swarm of bees in May is worth a load of hay.' I am not sure that Root was the author but it is one of the old rhymes which contains the truth. The rest of it 'A swarm of bees in June is worth a silver spoon' and 'A swarm of bees in July isn't worth a fly' are quite true. The values are a little exaggerated one way or another." (Mr. Alexander suggested the "Famous Sayings" for July which we are using, in this number.)

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Excuse Us, Mr. Hassler

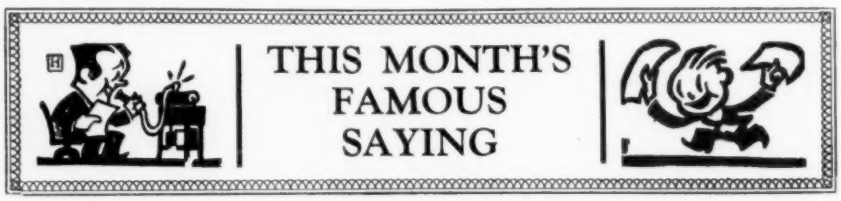
Mr. Hassler is quite disgusted over an error which we made in his answer to "Famous Sayings" for April. We quoted him as follows: "Last year I left most of my bees in two-story 10-frame hives all summer. About the only ones that swarmed had old queen **cells.**" Now wasn't that a bonehead mistake for us to make? It should read, of course, "Last year I left most of my bees in two-story 10-frame hives all summer. About the only ones that swarmed had **old queens.**" So there, Mr. Hassler, we take the blame and remove you from the ranks of the ignorant. Don't wonder you were disgusted. Well, you are first again this time together with Mr. Jones so don't worry. You will have quite a library if you keep this up.

An Old Recipe

In the old days before granulated sugar became an article of common use many recipes were offered for making artificial honey. Perhaps our readers may be interested in trying one which was offered more than sixty years ago. It was known as "Tomato Honey" and was made as follows:

"To each pound of tomatoes allow the grated peel of a lemon and six fresh peach leaves. Boil slowly until they are all to pieces and strain through a bag. To each pound of liquid allow one pound of sugar, and the juice of one lemen. Boil them together for half an hour or until they make a thick jelly."

This was recommended as scarcely to be distinguished from real honey. In this day of low honey prices there is no longer any incentive to find a substitute made in imitation of that product.



Freds priCe War On The RAts Took her Noon Crop

As just mentioned, this Famous Saying was proposed by H. D. Alexander, of Priest River, Idaho. Now it is not only a Famous Saying but it is certainly one of the most important fundamentals of beekeeping. It's timely. Comes right now when we will have to admit its usefulness. Because of the fact that it is so very important, we advise you to try your hand at it. Who said it and explain it.

No disappointments. If you win, select any book published by the American Bee Journal as your reward. Each capital in the sentence begins a word of the Saying. Now, what is it? The race is on.

Swarm Control and Queen Rearing

By Chas. Kruse,
Illinois.

This is the third of the series on comb honey production by Mr. Kruse. Now we are in the flow, with swarming to control and new queens to furnish.

Swarming

MANY theories have been advanced as to the cause of it. The crowding of the brood chamber by young bees is prominent as a reason. If this is a well established fact, why is it that in some seasons no amount of crowding will cause bees to swarm? Why does swarming end so suddenly? We may have six or eight widely separated yards, yet in 45 to 48 hours, the bees will be tearing down cells in all of the yards.

In such years they may, through the interference of the beekeeper, start cells but these are under sized

Carl Killion, grafting to prepared cells.

and produce queens of low vitality. What we need are strong, vigorous queens. To rear queens of this quality, is the intention of all good comb honey producers. The efforts spent in rearing queens will pay good dividends.

Here is a simple plan that will produce queens of high quality, and at the same time, bring swarming under control. Let us suppose that the honeyflow is on and that the bees are making preparation for swarming and we find a colony starting cells. If the cells are sturdy and large, the bees of this colony should be good cell builders.

Having located such a colony, we are ready to begin. All the cells are destroyed, and outside comb removed, opening the brood nest in the center. Some of the jelly from the cells destroyed has been saved and thinned carefully with water. Do not remove the queen from the colony as the cells will be larger and of better quality because of her presence. Then everything remains natural. See the point?

Now, with the brood nest open in the center, close the hive and we are ready for the important point. We all agree to breed from the best. What is the best? Colonies that distinguish themselves by producing heavy white sections in numbers equal to or more than any colony we possess. The queen must be and should be of pure stock, her bees gentle and quiet when handling.

The cells for grafting are important. They should be 5/16 in diameter

Lowering the cells into the cluster.

and not larger than ½ inch, made of tender, **white** wax, free of dirt and dust.

Jelly the size of a small shot is placed in each cell. Larvae that are 24 to 36 hours old, from the selected stock, are placed one in each cell. The cell bar illustrated is placed in the cell building comb and given to the colony we have prepared for the cell building.

When you now remove the cover on this colony you have prepared for cell building as described, you will see a large cluster of bees in the open space left. Gently place the comb with the cells in the hive among the cluster of bees and you are through.

Should you graft to this same colony again in five or six days, you will find, for some mysterious reason, the colony is not as good. A word to the wise is sufficient. Graft no more than one bar of 12 or 13 cells.

You will find queens by this method of the highest quality. This is for the comb honey producer and not for commercial queen breeders.

You will note that, by this plan, storing is not interfered with. The bees and queen are contented. If you follow the plan, you will be rewarded with cells of wonderful quality but

The finished cells.

remember the colony will swarm if you are not careful, even though you have substituted cells of your own in the place of theirs.

Now for swarm control. Ah! those cold calculating words, swarm control! If we knew the mysterious magic of swarming. Why does this marvelous insect swarm? Is it a wild delirium to propagate itself? Is that the reason for the wild high pitched wing note of the drones and workers at this time?

Bees live in a world separated from man. Will we ever know all the mysteries of swarming? There are times when all men can do will not control it. Often there is that wild desire to leave the hive even though death is at the end of the journey. Is it the vast amount of honey in the fields? Is it the quest of the infinite to be off on a wild, carefree trip, let come what will? Is there some intoxication in fresh nectar, this vast new treasure that abounds in apparently limitless quantity? Is it true that science can master all the mysteries of swarming? We doubt it.

We can thwart the plan of the bees to some degree, but sometimes they will swarm in spite of our efforts. This marvelous insect should be an everlasting inspiration. Their unity of purpose, their will to live and perform after their kind should be an inspiration to all discerning men.

We can remove all the cells and the queen from colonies that are intent on swarming, and keep them queenless until all the brood is sealed, removing the queen cells that may form subsequently.

Then give them a queen or a ripe queen cell. The ripe cell is best because the virgin will emerge in an environment that is conducive to her growth and she will be joyously received. We usually introduce this cell at the time we kill the cells that form subsequent to the removal of the queen and original swarm cells.

This plan keeps the colony in its natural state, and colony morale is of great importance. Radical measures of swarm control are not conducive to the storing of honey. Caging of queens is not desirable. Caged queens are injured after a few days.

When the virgin emerges from the cell, she is joyously received, promptly fed, and begins to lay, and the morale of the colony is at a high pitch, and storing proceeds in earnest.

Don't over-super your bees. They will stand an enormous amount of crowding after the young queens begin to lay. After a super is nearing completion it should be raised on top to keep the sections clean and white. When complete it should be removed promptly and carefully disinfected for moths and held ready for preparation for market.

If you will follow the method outlined in these articles, you will get sections of the finest quality of heavy weight that will promote sales. It is not the acme of perfection, but you will find that under most conditions the plan which I have given will work to the best advantage for you.

News Notes of American Honey Institute

National Honey Week

NATIONAL Honey Week this year will be November 11 to 17. To how many persons will you announce the dates? Program will be available about the 22nd of May. Start your local plans for the next celebration now. Don't let it wait until too late.

The Institute has a good contact program underway including the following companies: Kellogg's, American Gas Association, Carnation Milk Company, Bakers' Helper, Ralston's, U. S. Bureau of Chemistry, General Mills, National Retail Grocers, Pillsbury Flour Mills.

May we depend on you to announce the dates to other beekeepers and solicit the cooperation of everyone possible for this important event?

Century of Progress

The Kellogg Company cooperating with W. F. Straub & Company of Chicago are arranging a Honey Booth at the Century of Progress. Miss Barber has arranged with Mr. Straub to have Honey Krisp Balls served. A candy wrapper with Honey Krisp printed in colors is being prepared and a card giving recipes. Both the Kellogg Company and the Straub Laboratories are going to considerable expense in this connection. All booth attendants will be instructed to tell visitors at the Fair of the Institute's Recipe Service. It is possible that one of the staff of the Institute may spend a week giving demonstrations as well as securing reactions to honey from the visitors.

"Say It With Honey"

Mary Meade in the Chicago Tribune Food Column, Sunday, April 22, announces a Recipe Booklet selling for three cents at the Chicago office or five cents by mail. It includes copy from the Institute's "Using Honey" leaflet. Sixteen of the twenty-seven recipes prepared by the Institute are given.

Mary Ellis Ames "Cooking Close-Ups"

Two Pillsbury Broadcasts in April featured honey over the Columbia network. The approximate total distribution of recipes is between 600 and 700, in addition to the many women who copy the recipes while the broadcast is on. Baked Honey Fudge brought the biggest returns. This network reaches from coast to coast and from Canada to the Gulf. Recipes were broadcasted for Apple Slump, Honey Fruit Bread, Honey Peach Cobbler, Frosted Honey Bars and Baked Honey Fudge.

Pyrex Menu Calendar

The Menu Calendar furnished by Pyrex Ovenware through Lucy Maltby, adviser for Corning Glass Works, includes not only a recipe for "Honey Plum Pudding," using 1 cup of honey but a colored picture of the pudding. It was a beautifully printed Menu Calendar for the year 1934-35.

Service Directors Conference

The Secretary attended the meeting of the Home Service Directors Conference of the American Gas Association at Chicago, April 13. The purpose of the meeting was to determine how to improve cooking school programs. The Secretary discussed the use of honey with the home service directors from Michigan, New Jersey, Wisconsin, Ohio, Illinois, New York and Texas, all of whom will demonstrate honey dishes in cooking schools this year.

Cora Wayne's Pure Honey Loaf

Ina Lindman, Director of Home Economics for the United Fruit Company sent samples of a new Pure Honey Loaf to Wisconsin to your secretary. This is made from apple pectin and honey with various flavors added. The loaf is transparent like honey, and is marketed under the same trade name of "Cora Wayne's Pure Honey Loaf" and described as being perfect for salads, sandwiches, meat dishes and desserts. It may be cut into slices, dices or cubes. For further information, write to Wayne Farm Foods, New York Office, 303 W. 42nd Street, New York City.

License and Marketing Agreement With Shippers of Package Bees and Queens

The Marketing Agreement for package bees, nuclei and queens for the information of readers was approved and executed by the Secretary of Agriculture May 2, 1934 and became effective May 6 at 12:01 A. M. Eastern Standard Time. The Secretary issued a blanket License which exempts no one in the United States engaged in the business of shipping

package bees, nuclei or queens from the provisions of the Agreement.

Over 80% of the shippers of bees and queens in this country signed the Agreement and their names and addresses appear on the pamphlet describing the Agreement. Copies of this were distributed to all shippers of record. If your name was not on the list and you wish to have a copy, write to Mr. Laurence H. Sample, General Crops Section, Department of Agriculture, Washington, D. C.

The minimum prices asked and received by the shippers have not diminished the number of sales. In fact, shippers report more orders than they can fill, making it necessary to disappoint some of the customers. The good faith and sincerity of the shippers is to be commended. In the Agreement, shippers included practices customary, such as the guarantee of replacement of bees and queens, the discontinuance of misleading advertising and not to ship from yards infected with American foulbrood.

Under the Agreement, reports from shippers are required to be made at intervals, the information contained to be regarded as confidential and not available for examination even by members of the Control Committee.

The License is administered by a Control Committee selected by the shippers subject to the approval of the Secretary of Agriculture and said committee is authorized to employ a Director and Managing Director who shall not be a shipper nor have any financial interest in any package bee or queen rearing enterprise, and whose duty it shall be to receive and compile the reports and make the results available to each shipper, to hear complaints and to investigate violations and so on. He shall collect from each shipper a proportionate share of the expense of administering the Agreement based on the sales of each shipper.

If every man in the industry will give his wholehearted cooperation in the support of this movement and boost products to improve quality and service, he will not only have satisfied himself, but will have a satisfied customer, both of which will make a better year in 1935.

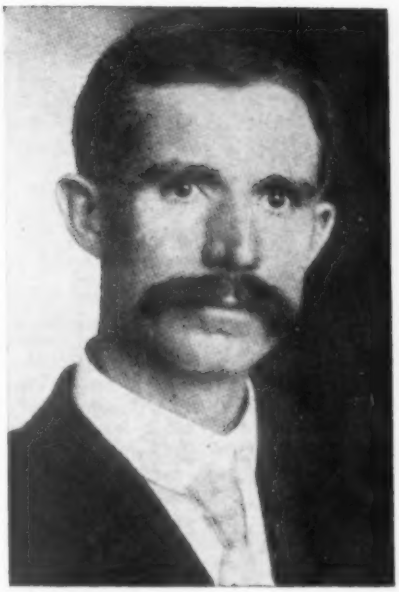
Laurence H. Sample.
James I. Hambleton.

Honey Boon to Farmers

During the past three years, the honey crop in California has made it possible for many of the smaller farmer-beekeepers to supply clothing and shoes for their children, which they would have otherwise found it difficult to provide. Regardless of the low price of honey, it has been a cash crop; and that cash, however small, has been a great advantage to the farmer with bees.—(Cal. Betimes.)

A Pioneer Producer Speaks

By L. H. Sweetser,
Idaho.



"AUTOMATICALLY, the honey industry will come back to normal," says R. T. Rhees, pioneer apiarist of Utah, the "Beehive State." I met Mr. Rhees at his fine oldfashioned home in Pleasant View, Bear River Valley. The house sets high on a steep slope, half hidden by a wealth of trees of many varieties, overlooking Great Salt Lake with the jagged sky line of Promontory Mountain on the west.

Standing there, one can glimpse the valley where the Rhees apiaries once stretched for sixty miles with at times as high as 4,000 colonies. They are reduced now to half that number, and Rhees himself has retired from active management, leaving the direct care of the business to his son. His interest, though, in honey production has not waned.

Just fifty years ago, at sixteen years of age, Rhees bought his first bees and became a producer. He has stayed with the business ever since. He was the first to use a movable extracting wagon. He shipped the first carload of honey to leave Utah. "There were no honey cans available then," says Rhees, "so I used barrels. It was before the days of prohibition, and I got a lot of alcohol barrels, scalded and waxed them, and filled them with honey. The car went to New York, and the consignment brought me six cents a pound.

"Honey brings half that now, but it will come back," Rhees continued.

Rhees says the honey crop of Utah is more than twenty-five per cent below normal. Low prices have caused producers to cut down their colonies. The season is shorter, too, he claims. All farmers now own mowers, and they harvest alfalfa all at one time, instead of letting the cutting drag along as when mowing machines were more scarce. There is, therefore, a short blossoming period.

"Yes, honey will come back automatically, but an active campaign should be made to bring it back at once," he insisted. "No organized effort is being made to extend and broaden the use of honey. The agricultural colleges and dietitians recommend natural foods. They publish bulletins, write newspaper and magazine articles, and broadcast over the radio. They advise natural sweets, such as maple syrup. But nothing is said about honey.

"A slight effort has been made to increase the use of honey, locally. In Ogden and Salt Lake City, bakers are putting out a honey biscuit. But no concerted effort is being made. Right now is the time to put honey forward. This is said to be a country flowing with milk and honey. Why not make it so literally? Manufacturers should be persuaded to market a brand of honey-sweetened ice cream.

"Honey should be substituted for corn syrup. Honey should be used in candy, and advertised. People have short memories. They forget honey, if it is not advertised. The product should be continuously brought to their attention.

"Honey is a perfect syrup. The bees know how to make it. They thin their honey with water, for their own use. Why should not people do the same? In our home, we use honey syrup for our cakes. We have done so for twenty years. We mix honey with boiling water, to the consistency of Log Cabin syrup. It is not only delicious, but it does not candy, and it does not spoil. In twenty years we have never known our honey syrup to spoil."

Mr. Rhees concluded, "Honey syrup is delicious. All honey products are delicious. They should be kept before the public by an active and continuous campaign of spirited publicity."

The Extractor

The honey extractor is largely responsible for the development of commercial honey production. We must recognize, of course, the necessity for movable frames and comb foundation to insure success, but without the extractor it is hardly to be expected that commercial honey production could have reached its present extent.

In May, 1887, Henry Alley, then one of the leading bee men, wrote an article for the American Apiculturist in which he condemned the extractor as responsible for the decline in the prosperity of the beekeeper. He stated that in his opinion better prices would come within a year if the general use of the extractor could be discontinued. In this his attitude was similar to many who lay the present difficulties of the farmer to the use of the automobile.

From Alley's article we quote as follows: "Now that most every beekeeper uses the extractor the price of honey is less than one-half what it was ten years ago. Is this not largely, yes, wholly due to the use of the extractor?

"If this state of things continues, not only the extractor must go but the large honey producer must go also, as he will be compelled to abandon a business at which it is impossible to make both ends meet."

Instead of the big honey producer being compelled to give up the business because of the use of the extractor as Alley predicted, it has made it possible for him to increase his output to the point where he could make money at a very low price. It is only by the use of the labor saving equipment that he is able to meet the competition of sugar and other low priced sweets.

In the period of adjustment to new equipment there is always a time when the benefits appear doubtful, but in the end the use of labor saving machinery always adds to the prosperity of the race.

The Giant Bee of India

An occasional letter comes to this office inquiring about the possibility of importing the Giant Bee of India (**Apis Dorsata**), for use in this country. Many years ago Frank Benton, then connected with the United States Department of Agriculture, made a trip to India with the purpose of securing bees of this species. He failed in his mission and no successful attempt has since been made.

It is very doubtful whether the bees could be brought to this country alive, and if they were it would probably result in no service to the beekeepers. The habits of the insects are such as to make it unlikely that they could be kept in hives and cultivated for their honey as are our honeybees. They build a single comb about two or three feet in width and five to six feet long and seldom remain long in one spot. They abandon the comb and move to a new location, often as much as a hundred miles distant, when the honeyflow stops.

In the British Bee Journal for January 23, 1902, appears an extended account of these insects with the following notes as to the special characteristics:

1. It is said to be exceedingly vicious.
2. It has never been known to build its nest under shelter, but mostly on lofty trees or overhanging rocks.
3. After the honey season they will desert their nests and often travel long distances.
4. They build single combs.
5. They rarely remain in one locality for more than a few weeks.

The Hive Entrance

Experienced beekeepers learn to judge the condition of the colony to a great extent by what they can observe of the actions of the bees at the entrance of the hive. They can tell at a glance when something is wrong, from the nature of the activity which can be seen from the outside. This does not mean that they depend upon surface appearances, for all good beekeepers make periodical examinations of the colony, but they are able to anticipate what they will find in the hive from entrance activity. A thorough knowledge of bee behavior is essential to large success in honey production.

Visitors to Fruit Blossoms

The May issue of "Bee Craft" contains a picture of the common visitors to fruit blossoms in England. Thirty-six different insects are shown which thus visit the blossoms and assist in the pollination of the fruit. Of these, twenty-four are bees. In view of the large number of wild bees common in regions where there is much broken or wooded land, pollination problems are simple compared to what we find in regions where unbroken orchards cover a wide expanse of country. Under such conditions the honeybee becomes essential to securing a successful set of fruit.

Winter Losses

Reports indicate an unusually heavy winter loss in the eastern states where the winter was quite severe. In some cases lack of stores, or poor quality stores are blamed for the losses, and in others lack of sufficient protection is responsible.

It is interesting to note that many colonies died with abundant stores in the hive which the bees were unable to reach. When the cluster moved to the top of the comb in severe weather the bees were unable to move over to another part of the hive where food was available. This fault of the Langstroth hive was pointed out more than fifty years ago by beekeepers who had seen strong colonies perish in cold weather in this manner. When the eight frame Langstroth hives began to replace the others with deep frames which were formerly in common use, bees began to disappear from mid-western farms. The shallow hive is an expert's hive and even in his hands untold thousands of colonies are lost in severe winters as was the case this time.

Bees will stand long-continued and severe cold if they are dry and well provided with good stores. The stores must be above the cluster within reach of the bees, without change of position during severe cold. It is probable that far more bees were lost because of shallow frames than will ever be credited to that cause.

Old Honey

We often hear it said that honey does not deteriorate with age. Recently there has been a story going the rounds of the press to the effect that honey found in the tomb of the ancient Egyptian King Tut was still good.

One having had the experience of trying to keep up a collection of samples of honey from various sources will find it hard to believe such stories. In the office of the American Bee Journal we kept such a collection for several years in order to compare honey from different localities and from different floral sources. This honey changed in color and quality so rapidly that we found it

impossible to maintain the samples in such condition as to be of any value.

The oldest sample was honeydew from hickory and box elder gathered in Iowa in 1898. Honeydew is poor enough at any time, but this old sample had little resemblance to anything which could be used at all. It was almost black and no longer even sweet. Clover honey twenty years old was so discolored that one could hardly recognize it as honey and the quality was so poor that one would hardly offer it for bakers' use to say nothing of table use.

Honey can be kept without serious loss for a limited time and when kept closed in tight containers which exclude the light may still be good after several years, but stories of honey from ancient tombs are hardly to be believed.

Back to Normal

There is much talk about getting back to normal but the big question is, what is normal? In 1889 hogs were selling in Chicago at three cents per pound and extracted honey at from four to seven cents per pound. Prices are not much different now. Perhaps these prices are as near to normal as the extremely high one which prevailed but a few years back.

Drought

The widespread lack of moisture in the Middle West offers real concern to those dependent upon agriculture. For the past two years the rainfall has been below normal over a wide expanse.

This fact brings to mind the poem by William Cullen Bryant describing the visit of the Indian to the burial place of his fathers. After a pleasing description of the region as it was when the white man came followed the line:

"Behold I see a fearful sign to which the white man's eyes are blind." Then comes his description of the gradual change which is destined to come as a result of the white man's plow, his cutting of the forests and draining of the water reserves. The Indian closes with these prophetic words:

"The realm our tribes were crushed to get may be a barren desert yet."

It seems incredible that intelligent people could continue the constant destruction of the forests which control stream flow, the drainage of every small lake and bog and the straightening of the small streams to the present point. Already the threat to the future of the region is ominous. Soil erosion is responsible for the removal of thousands of acres of productive land every year and the alternation of drought and flood is making a changed country. It is highly important that the rising generation be made to understand the danger while there is yet time to avoid the destiny which the Indian foretold.

Need of Cheaper Distribution

In a recent issue of Canadian Bee Journal, A.W. Bowman had a very interesting article concerning the handling of farm products by commercial distributing agencies. He called attention to the fact that when farmers processed and sold their own ham, butter, cheese, lard, etc., they received a much greater part of the price paid by the consumer. The present day packing system gives the buyer an attractive product at a higher price, while the producer gets less for it.

There is much food for thought in the arguments which Mr. Bowman offers. It is true that the farmer did get a larger share of the consumer's dollar when he marketed his own products, but marketing is a separate job and should be paid for accordingly. When the farmer was his own distributor he got paid both for producing and marketing, although not as much as he should. The packing plants have added expensive costs to the product by the time it reaches the consumer and in the process have taken a toll of both producer and consumer.

Theoretically the producer should make this up by having more time for production and thus increase his output. Practically, it does not always work out that way.

The greatest need of agriculture today in all its branches is cheaper and more efficient distribution. Goods pass through too many hands to be handled cheaply. With the threat of overproduction it is hard for the producer to secure a price which will insure maintenance of the new standards of living. The man who can solve this problem will deserve much from his fellow men.

Pleurisy Root for Honey

In the eighties when there was so much agitation about planting for honey, many different things were recommended for the purpose of improving the bee pasture. Among them may be mentioned pleurisy Root (**Asclepias tuberosa**), which was a common wild plant on the prairies of the Middle West. It belongs to the milkweed family and its clusters of bright orange colored flowers are very attractive. It is of interest now because the flower lovers are planting it for the purpose of adding to the attractions of their gardens and it may become common once again as a cultivated plant.

James Heddon wrote in American Apiculturist in 1887 that it was the best honey plant with which he was acquainted, not excepting white clover or basswood. He stated that if there is any plant to which good land might profitably be devoted for the sole purpose of honey production it is pleurisy root. He recommended it also for poor sandy land unsuited for the production of farm crops where it would succeed admirably. He spoke of the honey as very light in color and of very good flavor. Yielding in wet weather and dry he regarded it as an unfailing source of nectar.

Success to the gardeners who are recommending pleurisy root. The bee men may be expected to offer encouragement.

History Repeats

Reading the old bee magazines of the 1880's one finds that the bee men of that day were meeting problems very similar to those which we face today. Reports of drought and short crops, low prices and hard times sound like the things we read in the publications of the present.

Benefits of the Depression

A well known midwestern beekeeper recently expressed himself to the writer as of the opinion that the depression has been good for the beekeeping industry. As for himself, he said he was well advanced in years before he had the courage to depend entirely upon beekeeping for a livelihood as he had long wanted to do. He said, further, that the low prices had brought honey into many new markets where it had before been a stranger and that low prices had compelled beekeepers to learn more efficient methods of production. He cited the case of a large producer who had thought that he could not produce honey to sell below ten cents per pound and who is now making substantial profits at half that price.

Certain it is that low prices have made many new customers for honey and that many producers are making money at the present prices.

Decline of Comb Honey

One of the significant changes which has taken place in the beekeeping industry in recent years is the decline in the production of comb honey. Honey in nicely finished sections is a high quality product, one of the finest things which goes to market, but the demand seems to be gradually diminishing. Extracted honey can be handled easier and sold cheaper and price rather than quality appears to dominate our markets of late. Many consumers still insist on honey in the comb and will take no other. It requires careful and efficient management to produce comb honey successfully and at the present rate it will eventually be replaced entirely by liquid or bulk honey. Volume of production rather than quality of product offers the greatest reward and this is responsible for the change.

A Let-Alone Hive

By Allen Latham,
Connecticut.

FRANK Pellett has asked me to tell of the outcome of my "let-alone" hive. For those not familiar with this type of hive I state that these were made from the large cases which thirty years ago shredded wheat came in. These cases were about thirty-one inches long, twenty inches wide and fifteen inches deep. Inner walls with air spaces were put in, and on these inner walls rested twenty or twenty-one frames, each one and one-half inches wide with solid end and top bars. The frames were made of various dimensions, but the later ones were about seventeen inches by thirteen inches inside measure. The outside of the box was covered with roofing paper of the felt type. The cover was made to telescope about three inches, there being an inner cover which was the original side of the box. The entrance was the full width at one end about seventeen inches long and one inch deep. When this space was cut from one end of the box, wire nails were driven in about three-eighths of an inch apart to keep out mice. The first eight frames next to the entrance (for the frames were crosswise) were for brood, and back of them was a thin frame of excluder zinc. The store frames, usually twelve in number, were back of this.

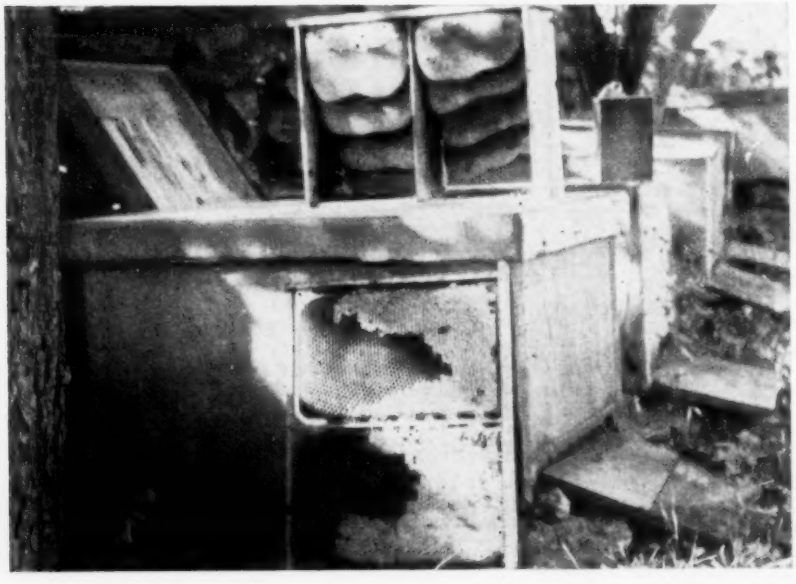
Now this hive was set in some out of the way place and visited only two or three times in a season. I had seventeen or so of them on Cape Cod and never saw them from September to July. When we went to our cottage in early July, I sometimes found upwards of one thousand pounds of honey awaiting me.

I at one time had more than one hundred of those hives, the largest apiary containing twenty, though usually I had only five to ten in a place. One apiary of seven did so well one season that I figured that I got $66 for each day's work I put in on these bees. That was before I had an auto, and most of the time was taken up in traveling back and forth the nine miles.

It was in 1901 that I built my first ones, and I ran them very successfully for ten years. One apiary of six hives did not swarm for five years, and they averaged sixty-five those five years annually. The honey was all chunk honey, being cut from the large rear frames.

Then about 1912 European foulbrood set in, and it hit these colonies badly. The bees were all of the black or mongrel type. I was forced to Italianize. The hives were ideal for the black bees. They seldom swarmed from it and not only put in plenty of stores for themselves but gave a good surplus. The Italian bees invariably swarmed from these hives, unless much time was expended in manipulation. If they did not swarm, they put in a good crop but laid up no stores in front for the winter. The black bee practices economy; the Italian bee is a spendthrift. So the let-alone hive was doomed. I tried them out with Carniolans with indifferent success, but have never tried them with the Caucasian. I think that they would work with Caucasian bees, as that bee has more characteristics in common with the black than with the Italian.

So gradually my big hives have become tenantless. As they begin to decay they are knocked to pieces for use in the furnace in the fall months. I now have only about a dozen left with bees in them. About fifteen years ago I made excellent use of them in connection with package bees. During



Two pictures of Latham's Let-Alone Hive. One shows mouse guards.

the war there was a great demand for package bees, and I made good profits from those big hives though they contained Italian bees. Then came the low-priced southern package, and I did not care to compete.

These hives were splendid winterers. I scarcely lost a colony in one of those hives in winter. Isolated cases of queenless colonies or colonies left without honey enough died in winter, but never a normal colony with plenty of stores. And they came out strong in spring. One colony once built five square feet of new comb during the bloom of maples. Never did I see this before or since. The Carniolan colonies swarmed the last week of April, big swarms.

If any young man is reading this, let him try it out. Use Caucasian bees, and set these hives out in places where there are no apiaries and where there is a lot of wasted honey. It will be a good experience. Anyone wishing to try it and sending ten cents will receive full instructions with outline sketches, but will send only for ten cents to pay postage and bother.

Prices Cannot Be Rigged

The impossibility of controlling prices for honey by law or artificial means is demonstrated with other farm products. While the people have little money with which to buy, a government limited low price cannot force a demand.

Supply and demand control prices. Supply is the quantity of honey available. Demand is a matter of public taste and ability to buy.

Supply fluctuates and the fluctuations are clearly evident in the record of receipts. Demand fluctuates to an equal degree but the fluctuations are not so easily seen because there is no definite record of them.

Changes in demand result from substitute purchases of competing products, changes of weather and the ability to buy.

The channels of trade in honey can be kept open only by keeping prices in line with the products which are and may be consumed in competition and by keeping a daily cash market for producers and a constant supply to consumers.

The saturation point of honey with other products evidently will be reached in the near future, when the purchases of honey may increase while other sweets may be compelled partially to step aside; and so honey will gradually come into its rightful use among consumers.

E. F. Strayon,
Nebraska.

[Now this is a good analysis and it will pay you to read it and remember it because that, in truth, is what controls the movement of honey.—Editor.]

The Ontario Bee Escape Board

The bee escape board which is mentioned in the March issue of your journal has no Porter Bee Escape. The escape principle works on the same plan as a fly trap. The bees come through the inch hole into the screen's triangular section, and since the only outlet is a small ⅜ inch hole, the bees pass through this, and since it is so small it is difficult for them to find their way back.

It is well known that when any board or screen is placed between the brood chamber and the supers the bees try to get next to the brood. They rapidly pass down through the larger hole and out the wire tunnel underneath, and as I said before, since this outlet in the wire tunnel is so small, they cannot find their way back.

This board is quite commonly used in Ontario and from the experiences which we have had with it we have found it to be quite efficient. It can never become plugged with dead bees.

Dr. E. J. Dyce,
Ontario.

A Coffee Honey

By C. M. Litteljohn,
Washington.

The autocrat of many household tables of the Pacific Northwest is a Guatemalan produced honey which has been imported into that region by a large coffee importing house and popularized under their familiar label of a characteristic pack-mule of the Andes Mountains and a bright and colorful mozo, or native of the great Cordillera of Central America.

The ambling mozo, in vivid scarlet serape, who walks along by the side of his well-laden mountain animal, is one of the most familiar sights of the region where the coffee and exquisitely flavored honey from coffee-blossoms emanates.

Capturing this theme on a label, the importing company has made a distinctive trade-mark for the honey which has been widely distributed around Seattle. Thus the mozo of the Central American mountains and his mule laden with coffee have become a sign of good honey in the Puget Sound region. The rich taste and flavor of the special dark-complexioned Guatemalan honey have won for it a preferred position in many family larders.

Bees that flit around the Central American mountains gather the honey from blossoms of the coffee trees in high altitudes. Some of the coffee trees producing the highest grade coffee grow at an altitude of five thousand feet, yielding small but valuable crops.

Through the wondrous chemistry of nature, the strong, heady aroma of the coffee blossoms in the thin mountainous air, is transferred to the product of the bees in a peculiar and exquisite tang, an exotic taste which, when the circumstances surrounding the gathering of the sweets by the bees is understood, may lead one naturally to remark that the honey has a distinctive and relished coffee flavor.

Brought into Seattle by the Commercial Importing Company of that city, the honey is received on Puget Sound in five-gallon tins. From these it is transferred to all manner of containers, from the small glass jars with the attractive mule and mozo label for general family use, to the much larger cans for hotels and restaurants.

Thus to the ever growing lexicon of honeys, a rare coffee honey from Central America may be added to enrich a world-wide collection for the connoisseur.

Corrugated Roofing for Hive Stands

Many are the ideas for hive stands. Some beekeepers use concrete ones which may well serve the purpose if the apiary is permanently located on soil which does not heave when the frost comes out. If the apiary is to be moved, however—Oh my!

Wooden stands made of cypress are fairly easily transported, but are bulky and must be leveled each spring. Two creosoted lengths of two by fours last a long time and are easily carried about, but these must be leveled each spring, also. Two tiles are also used, but are not so easily carried about and get out of level.

Nothing at all under the hive is still another idea, but hive bottoms are too expensive to be used in this manner.

What looks to me like an "answer to the maiden's prayer" has just come to my notice. That is a sheet of corrugated galvanized roofing cut into proper lengths, corrugations to run crosswise underneath the hive.

These cost about nineteen cents, too, are light in weight, take little room when transported, and should last a long time. It is surprising how well they adapt themselves to uneven ground.

E. G. Carr,
New Jersey.

Apicultural Research in the United States

By Robert R. Heaton,
Indiana.*

MANY beekeepers are perhaps wondering what their state-endowed institutions, and the federal government, are accomplishing in the field of beekeeping research. Since no accurate account of nation-wide research has been published lately, the following outline of experimental work, which is now underway, will present the status of work as shown by a survey made last year.

In some cases, there is a tendency to develop the study of beekeeping more along physiological lines which is undoubtedly an increasingly important line of scientific attack on beekeeping problems. A study of the projects will also reveal other lines of work, many of which are of great importance to the commercial beekeeper.

The information herein given was obtained by means of a questionnaire sent to either the state college or experiment station in every state of the United States. Of the 48 states, 19 reported work on beekeeping problems. Responses were received from every state, but Iowa and Wyoming. However, the research, in part, in these states was obtained from the United States Department of Agriculture Miscellaneous Publication No. 89 on the research work of the state agricultural experiment stations. In addition to the state work, the projects of the United States Department of Agriculture are included in the following list.

Present Research Projects
(Classified by Subject)

Bee Behavior:

Comparative flight of bees at different temperatures. (New York.)

Effect on bee colony from moving to and from orchard during fruit bloom. (Michigan.)

Variations and behavior of bee colonies of different races and strains. (Michigan.)

Behavior of bees in visiting different blooms. (Michigan.)

Reaction of a honeybee colony to artificial heat on the cluster in late winter and spring. (Michigan.)

Flight range of the honeybee. (Ohio, New York.)

Metabolism and activities of bees during the winter. (Minnesota.)

Bee Diseases:

Adult bee diseases. (California.)

Eradication of American foulbrood. (Kansas, Wyoming.)

Bee diseases in general. (Minnesota, Missouri, U. S. D. A.)

Breeding work in an effort to obtain resistant strains by inbreeding. (New Jersey.)

Effect of mineral content on prevalence of brood diseases. (New York.)

The practicability of treating colonies affected with American foulbrood. (Ohio.)

Bee Management and Economics:

Beekeeping management. (Minnesota, North Dakota, U. S. D. A.)

Economics of beekeeping in Minnesota. (Minnesota.)

Bee Hives, their construction and materials used. (Missouri.)

The cost of honey production in Oregon. (Oregon.)

Selective breeding of bees. (Texas, Wyoming.)

Beekeeping in Central Europe and the Soviet Union. (New York.)

A study of the colors of honey to establish a definable market color grade. (New York.)

Ecological:

The influence of weather on honey production. (Kansas, Iowa.)

Effect of temperature on length of life, consumption of food, and general activity. (New York.)

Collection and ecology of wild insects on apple blossoms to determine to what extent honeybees are needed to supplement the wild forms for adequate pollination. (New York.)

Honey and Its Uses:

Honey in dairy products. (Illinois.)

Color factors in honey and influence of heating. (Illinois.)

Study of the cause of fermentation in honey. (Wisconsin.)

The effect of temperature on honey in storage. (Wisconsin.)

Honey Plants:

Honey and pollen plants of the South. (U. S. D. A.)

Identification of pollens from nectar and pollen-bearing plants of California. (California.)

A study of the possibilities of reforestation with certain nectar bearing trees and shrubs. (Michigan.)

Study of state honey plants. (Missouri, North Carolina, Oregon, Iowa.)

Study of substitute honey plants. (Texas.)

Physiological:

Utilization of melezitose by honeybees. (New York.)

Consumption of stores and production records. (Illinois.)

Observations on arsenical spray poisoning. (Illinois.)

The metabolism and activities of bees during the winter. (Minnesota.)

Cause of dysentery and winter loss. (Wisconsin.)

A study of the bacterial flora of the intestinal tract of honeybees. (Iowa.)

Pollination by Bees:

Fruit pollination work with package bees. (Connecticut.)

Types of package bees for orchard pollination. (Illinois.)

Use of bees for pollination. (Massachusetts, Missouri, New York.)

Relation of bees to pollination. (Minnesota.)

The role of the honeybee in the pollination of economic plants. (Michigan, Ohio, U. S. D. A.)

Importance of the honeybee in seed production of sweet clover. (South Dakota.)

Races of Bees:

A study of **Apis indica**. (Massachusetts.)

High production strains of bees. (New Jersey.)

Races of honeybees. (Kansas.)

Wintering of Bees:

Winter protection. (Illinois, Kansas, North Carolina, Tennessee, Wyoming.)

A comparison of the efficiency of various methods of furnishing insulation and ventilation for the bee colony in winter. (Michigan.)

Daily gains and losses of hive weights as influenced by winter packing. (Missouri.)

The reduction of winter activities of bees. (Texas.)

Cause of dysentery and winter losses. (Wisconsin.)

Wintering in the intermountain region. (U. S. D. A.)

Miscellaneous:

Biology of wax-moths. (Illinois, New York.)

Study of pollen substitutes. (Kansas.)

Insemination of queen bees. (U. S. D. A.)

*This investigation was carried on and the results compiled as a term theme in a course in beekeeping under the supervision of Mr. B. Elwood Montgomery of the Department of Entomology of Purdue University.

Rule Doesn't Always Work

The belief that bees should be protected from the weather by contracting the entrances for winter, is correct, of course, yet bees often thrive when the protection is absent. I know of a colony in a fallen hollow tree in the woods near my apiary which survived three winters with an entrance as large as a man's hand, and located so that on a windy day snow could blow directly into it. One could reach in and touch the first comb. Yet this colony came through every winter in excellent condition until another beekeeper removed them—to my regret.

S. F. Haxton,
Pennsylvania.

Two Hands Full

Mrs. R. G. Dowd sends us this picture. It might almost be called three hands full if we count the clusters. Anyway a good sized swarm that will fit from the shoulders to the feet. The comparison is in favor of the swarm in the man's right hand. It's too bad when these swarms get away and it's a satisfaction to be able to hive them.

But you know after all we can't forget what Dr. Miller said: "A swarm of bees is like a cow in the garden." So while the occasional swarm may be a pleasant sight, many of them are a discouragement. Few of them are as good as these.

Destroying Queen Cells and Swarm Control

By Geo. H. Williams,
North Carolina.

The first two years I kept bees, they were in box hives. Each colony that wintered well would swarm about three times each, getting smaller till they were hardly worth saving.

Then I decided to use frame hives and swarming was one of the things I studied hard to control. So the first plan I decided upon was to destroy all queen cells every week. Then later decided to destroy them every four days to be sure to get them in the early stage as I did not have many colonies and time was not considered. After following this a couple of seasons I found that colonies so bent on swarming did not store much honey. Some of them would swarm, leaving the colony without queen cells and some would become queenless without swarming. So I concluded that this plan would not work. I found it better to let them swarm once and then prevent after swarming by moving the parent colony to a new stand on the day before the first after swarm was due to come out.

But this made too much swarming for me so I kept studying and reading everything I could get on swarm control (and am still doing so) and getting the best strain of Italian bees I could, the ones less inclined to swarm. (These I ordered through this Journal.) Now I began to look for queen cells in the strongest colonies as soon as I think there is any danger of cells being started. I winter in two-story hives and there are but few cells started until I reduce them to one story and put on comb honey supers, using extra bodies and weaker one to be refilled for food chambers or to be extracted.

Now for the critical time. Four or five days after the supers are given I look for queen cells. Some will have none and doing good work in the supers. Others will have a few just started with only eggs in them. Still others will have more and larger ones with larvae in them. All cells are destroyed at this time and they are left for another week. Those that have a few just started will usually give them up if other conditions are favorable, such as weather and a good flow of nectar.

The next trip is when some thinking is needed. Some will be doing nicely and needing more supers and no cells to be found. Some will not need any more supers but will have plenty of cells well advanced. (These are usually the ones that had the most and largest ones before.)

In this case there are two things to do or they will swarm. One is to make an artificial swarm, the other is to remove the old queen and destroy all queen cells, then seven or eight days later destroy all cells again and introduce a young laying queen. Now if the old queen is an extra good one (which is seldom the case) it is well to make an artificial swarm. If she is on the failing list just as they usually are with me, here is what will happen if an artificial swarm is made: One week later when the hive is opened, there will be very little brood and a number of queen cells started, which means that the old queen will soon disappear, leaving the colony with almost no brood till the young queen begins to lay. I believe it is the surest plan to remove the old queen and give a laying queen eight or ten days later.

Of course, everything is done in the way of room, shade and ventilation to prevent swarming. This plan should not be used on colonies that have been neglected previously.

Repeat Orders Measure the Container

Your cover page in November of that comb-honey glass jar is certainly attractive but honestly I would not use it if it were furnished me free simply because it will not get many repeat orders. Many will be bought from curiosity but when it is found on the table, it will soon be a disappointment. The flat bottle will tip over and how hard it is to get all the honey out. Wise housewives will think twice before buying more honey in such a container.

The simpler the container, the more easily it can be handled and the safer its position on the table, the better it is for us. I do not give this container two years of life.

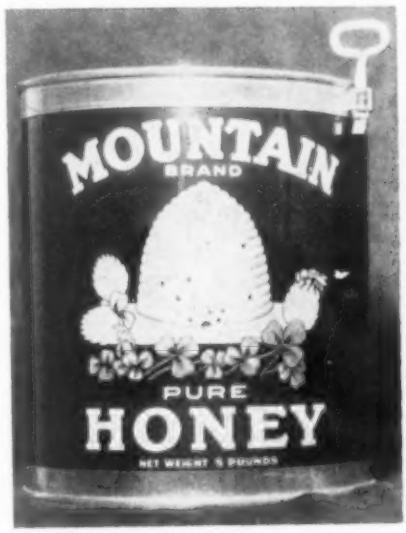
Allen Latham,
Connecticut.

Package Bees

Please note, from my experience with package bees covering twenty years, that for this district (Manitoba) May first is soon enough to receive package bees. Do not get them much later. Earlier packages may be all right at a lower elevation, but here, at a higher elevation, we get wind which is not good for bees.

G. E. Moss,
Souris, Manitoba.

Superior Uses a Key Top Tin



Superior Honey Company has adopted a key top tin as the picture shows. L. T. Ball says, "These keys attached to the tops of the cans make for easy opening. The lid of the can being lifted off with a simple twist of the wrist. Even the label remains untorn. The bright colored decoration in gold, pink and green attracts the buyer of the honey tins."

Glen Perrins,
Utah.

Some Problems of the Package Shipper

By Paul Cutts,
Alabama.

MOST package shippers try to give their customers what they want, but it is often hard to decide just what will please all customers.

In a recent article in the Canadian Beekeeper, R. M. Pugh, who has a lot of experience with packages, expressed the opinion that many packages were being received in Saskatchewan too early, since the packages received in May have given better results than those in April. In the March American Bee Journal on page 103 Professor Mitchener is equally sure that most packages are being received too late in the adjoining province of Manitoba.

Professor Mitchener advises beekeepers to get their bees by the 15th of April. If this is best for Manitoba, how early should bees be shipped to Ohio, Illinois, Iowa and others of the central states? On page 106 same issue, George Polhemus tells of a wonderful honey crop from packages arriving the 6th of May in Iowa, the average production 406 pounds. Would packages arriving a month earlier give better results? If so, how much better?

After thinking over these reports from prominent men in the region where packages are bought, how should the package shipper plan his business?

If many packages are to be shipped by April 15, shippers may be forced to move farther south to meet the demand. This will result in higher express charges and more loss in shipping. Theoretically the earliest packages should be shipped to the states nearest the shippers with shipments going farther north as the season opens up. It does not seem to work that way, however. Beekeepers just a few miles apart will order bees shipped on dates a month or so apart. Probably it is better for the producer that there is no one best time to have packages arrive, as it takes time to produce and ship them, and if everyone wanted them at the same moment it would be impossible to supply them.

In central Alabama queen excluders are put on at the beginning of the shipping season, and all packages are taken from above these excluders after smoking the nurse bees up from the brood nest. In this way there are no old queens, no scrubby virgins and no drones. To hunt up the queens in hives full of bees fast enough to ship packages would be an impossible task, and just to give a hurried look before shaking would mean that many old queens and some virgins would be taken into the packages.

In the article by Mr. Floyd on page 102, the most surprising thing is that he commends the shipper for putting in old queens and unfertilized virgins just because they are already introduced. When packages were first shipped from the South to the North many queens were introduced before shipping, and others were released by the bees enroute. Both these methods proved unsatisfactory, as the excitement of shipping would often cause the bees to kill the queen, and when the packages arrived the customer would not know whether he had a queen or not until there had been time for the queen to start laying, and thus much valuable time was lost.

It is easier to introduce a queen to a package after it is in the hive than to introduce her to the package bumping around in an express or mail car. No doubt many queens were lost by amateurs smoking and stirring the bees around trying to find the queen till they caused her to be balled, in the days when the queens were introduced before shipping.

Mr. Floyd's article on June packages is most interesting. If uses can be found for packages during June, it will lengthen the season for the shipper, and there is no doubt that packages can be produced for much less than in April. However, we believe that 50% discount is too low. The weather is often hot in June and losses in shipping would probably be heavier.

Salt for Bees

On page 461 of the December issue, appears an item about salt for bees. It reports an old German beekeeper who said that he placed a ring of salt around the hives. "And then how they would gather honey."

It has brought a number of comments. Joe Marty, Oregon, writes—"Near my apiary is a small stream from which my bees get water. In the spring bees will frequent the barn lots where they seem to gather salty deposits. Whenever I note this I promptly get salt and sprinkle it heavily over the edge of this little brook. You will be surprised to note how quickly the bees learn it is there. It will not be long until most of the bees are getting their drinking water from the salted place. They practically quit their visitations to the barnyard.

"Some years ago a fellow beekeeper suggested giving salt to bees and since then I have made certain that they have salt all the time when they are working. Most of the bee men I know in this country give salt to bees. Whether it does them any good or not, I do not know; but I do know that it keeps them from places of filth."

C. F. Lang, Wisconsin—"By sprinkling salt on wet sod, you will find the bees will keep away from less desirable places and they will quickly find the salt you put out."

J. Tissot, Ottawa—"About fifteen years ago, I bought twenty colonies of bees from a man here in Ottawa. I bought them in the cellar and he put them out the following day. I was anxious to see them. They were out flying and a great many were drinking opposite the hives on the wet lawn. I asked the previous owner why and he told me he always gave salt to his bees every spring.

"As an experiment in the home bee yard, I put two dishes of water next to each other. In the one I put salted water and in the other no salt. It was noticeable that there were more bees frequenting the salted water than the other. For several years, in the spring I have fed sugar syrup mixed with well beaten eggs or with whole milk to which I always add a little salt. The result has always been good strong colonies. Bees can do without salt, of course, but they do make use of it and I would suggest that some of our research men find out of what value it is."

Florence Bennett, Oregon—"I have kept bees for eight years and always put out a salt lick for them. I have a small trough of water with salt dissolved in it. They are as fond of it as any living creature. I just decided they needed it from the fact that they wanted it."

Albert Potter, Rhode Island—"A number of years ago I was advised to feed my bees salted water to cure Isle of Wight disease, sometimes called May disease. On this same page, 461 December, is an article about the book 'The Way of the Bee' written by George Rendl. On page 36 line 17 it reads 'On the edge of the ditch lies a block of salt, lost or thrown away by some shepherd. The bees take their fill of spicy, salted water. They bring water enough for what is needed, no more and no less.'"

E. G. Carr of New Jersey also calls attention to the fact that bees seek salt for some purpose or another. No one knows just why.

The Honey Locust

By Gerald Gay,
Iowa.

FEW trees are as useful to beekeeper and farmer alike as is the black locust. One could name other trees which perhaps would produce more profit for the beekeeper in terms of surplus honey. But many of these trees have become almost extinct because they do not serve the farmer as well. Blooming as it does at a time just prior to the white clover flow, when little else is to be had by the bees, little more need be said in its favor for the beekeeper.

What is more satisfying than the aroma of the black locust blossoms on the early morning air, together with the hum of the bees which have taken charge of the locust grove?

The black locust (known in some communities as white or yellow locust) must not be confused with the thorny honey locust, which is of little value to either beekeeper or farmer.

Black locust is especially recommended in stopping gully washing and sheet erosion of our poorer soils. No tree thrives on such a wide variety of soils or lends itself so wonderfully to making shelter belts, windbreaks and lawn planting.

Fence posts of black locust rank next to osage and hardy catalpa in durability. The writer has locust posts set eighteen years ago that are apparently as sound as when set.

The fibrous root system of the locust not only holds the soil but improves the fertility as well.

This tree being a legume compares favorably with our clovers, alfalfa, soy beans, cowpeas, etc., in soil building ability. A soil reclaimed by black locust soon has sufficient nitrogen supply to support a green covering of blue grass sod. Blue grass does exceptionally well under an open planting of locust. This can not be said of some of our more popular trees such as the American elm.

With the government soil improvement and reforestry program getting under way, a year or two hence should see thousands of black locust trees planted on some of our poorer soils.

Beekeepers can do well by supplying their farmer friends with locust trees of their own raising. The locust is easily propagated from the seed, and small seedlings are inexpensive when purchased in quantity lots.

Locust seeds may be purchased from any reliable nurseryman, or the seed pods may be gathered from the tree in late summer. The pods do not need any special care in storage other than being protected from mice or other rodents. At your convenience remove the seeds from the pods. Locust seeds have a very hard covering. In order to hasten germination cover the seeds with boiling water and allow to cool. Plant as early as possible in an open bed in the garden, just as you would plant radishes. Give clean cultivation throughout the summer. After one season's growth they should be at least two feet high and may be moved to their permanent location. Should one desire, the seedlings may be transplanted in a nursery row and cared for the second season as one would care for corn, after which they may be placed in permanent plantings.

For gully or erosion work place the trees about four feet apart each way, and stagger every other row; that is, place each tree in such a position so that it will be between two trees of the previous row. If possible run the rows northeast to southwest, as this allows the admittance of more sunlight to the planting. As the planting develops, remove sufficient trees to keep it open, allowing plenty of sunlight to enter and thus encouraging the growth of grass among the trees.

The black locust makes a rapid growth, is a tall, straight, graceful tree, and soon develops into a thing of beauty. Especially is this true at blossoming time, when the leaves are almost hidden from view by the snow-white blossoms. The individual blossom resembles that of the white sweet pea, or the garden pea. The blossoms, however, are placed several together on long pendulous stems.

Coffey, in Honolulu, Solves "Sayings"

"Eat Thou Honey Because It Is Good"—Solomon.

The above is my answer to your February "Sayings." This is one of the simplest and most impressive reasons ever given for the use of honey. The beekeeper who uses it in his honey advertising is also as wise as Solomon. He does not need to remind you then that honey is the oldest sweet and that it has been considered the best sweet since the earliest history.

A catchy advertisement for honey, that should excite much interest, would be a contest to answer the question "Where in the Bible are we told to eat honey?"

Every person sending in the correct answer would be given a package of Clover Blossom Honey or some worthwhile prize. Such advertising causes people to think about honey and to wish to try it and they often quickly become real honey customers.

So the words of King Solomon are worthy of being heeded. "My son, increase your honey sales by making known this ancient proverb."

H. E. Coffey,
Hawaii.

Moisture in the Hive

While making the rounds of my yards yesterday, only two hives showed any moisture whatever. These were covered with sheets of linoleum next to the combs above the brood. There were no holes in the linoleum to give any upward escape of moisture and both colonies had water running out the front. Both were packed on top with a deep super of leaves.

Several hundred other colonies, with burlap, or other cloth, or honey board with open escape hole, packed above in a similar manner, were evidently in prime condition.

J. H. Sturdevant,
Nebraska.

An Efficient Wax Rendering Outfit At Small Cost

By R. W. Barnes,
Nebraska.

The outfit — 1. Wrought iron bench screw. 2. 3x4 oak cross piece. 3. Weather element. 4. Divisions. 5. Spider. 6. Piece used under spider.

IT is no doubt safe to assume that most any beekeeper today is anxious to save money and willing to build as much of his own equipment as possible. The old saying "A penny saved is a penny earned" was never truer than today.

The necessary material for constructing this wax press can be found around most small towns, possibly it may even be at hand around your shop. You many not recognize it as such in its present state, but I feel sure if I started you on trail of it your own ingenuity will unearth all you need to complete even a better one than I am trying to describe to you. I suggest that you take the following list of things needed and make a survey of your present unused equipment. Take with you an open, unbiased mind, free from prejudices that might cause you to discard the possibilities of some discarded piece that you had previously devised with such high hopes of revolutionizing the entire beekeeper's art, with great honors to yourself, and other material, advantages too numerous to mention:

1 55-gal. oil or linseed oil drum	$ .75
1 wrought iron bench screw, 15½" long, 1¼" diam.	1.25
1 piece oak 3"x4" with hole in center to fit screw	.50
1 nipple ¾"x1"	.10
1 nipple 1½"x6"	.30
1 stop cock ¾"	.50
6 ft. ¼" pipe and 3 ft. ¼" pipe	.40
3 ft. ¾" hose for steam connection or connect up solid with pipe	.40
1 ¼" steam valve	
2 U-shaped handles for tank	.50
1 ¼ ell and 1 ¼ cap	.15
8 ⅜"x1" bolts for tank handles	.10
Channel iron for spider	.50
Total for material	$5.45
Blacksmithing	2.00
Entire total	$7.45

The drum should be one with the filler plug in the side of the drum, halfway between each end, and with the outlet plug in one end. This end of the barrel will be the bottom of your wax press and the hole in the side will be where you will screw your wax outlet pipe. Mark a line above this wax outlet hole about three or four inches. Make sure the line is true with the tank so that you will have a good even tank the same height all around. Now with a real sharp chisel, cut carefully around this line. This will leave you a tank about twenty-four inches deep, with an outlet hole in the bottom and one in the side. A three-quarter inch plug you will find will just fit this hole, or, if you prefer, you can screw a stop cock valve into it, using a three-quarter inch nipple instead of the plug. Then obtain a piece of pipe the diameter of the wax outlet hole about six or eight inches long. Screw this in place. This completes the tank part of the wax press.

Next, take a piece of one-quarter inch gas pipe and bend it in a true circle to fit just inside the completed tank and every two inches around this circle pipe, make a small saw cut with your hack saw. These cuts will serve as steam outlets for heating your tank. A one-quarter inch ell screwed onto this finished steam heating element and a quarter inch cap screwed onto the other end is placed in the bottom of your tank and a piece of quarter inch pipe about six inches longer than your tank is deep is then screwed into the heating element to conduct the steam to it. If you do not have steam for running your wax press, then you do not need this heating element as you would set the tank directly over the fire for heating purposes. At this point, it may be necessary to make a visit to your local blacksmith shop. You will have him make you two iron handles and fit them on your tank. Make these handles so they fit the oak cross piece without too much play, still so that the cross piece can be easily pushed into them. These handles should be securely bolted the same height on each side from the bottom. Now in the center of the oak cross piece have a hole bored the size of the carpenter's vise screw so it will just slip through easily without very much play. Fasten the female part of your carpenter's vise to this oak cross piece, lining it up by running the screw down through the wood, screwing it into the female block, then fastening it securely with heavy screws. This part is very important and the hole through the cross piece should be no larger than absolutely necessary to accommodate the screw, as this forms the pressure center when you are pressing your wax and if you get this hole too large it will break the female part of the vise.

To make the spider or pressure plate, I use a piece of cast iron about eight inches square and an inch thick, with a hole countersunk about halfway to take the end of the screw. This spider will be the hardest to obtain and get to work properly. I would suggest the following method in building the spider:

From your auto wrecking company secure part of an old Model T frame. This is U-shaped channel iron. Have your blacksmith cut it and weld it into a cross, so that it will be about twelve inches square. Countersink a hole to take the end of your screw and it will give you as good results

as though you had had one cast to order.

Now to make the slat partitions for the press. Unless you have a circle saw you may have to get the material ripped at your lumber yard. I used oak strips ⅜"x¾". Take a piece of paper and cut it just large enough to fit down into your tank. Then lay your strips about three-quarters of an inch apart over the paper and another layer of strips crosswise in the same manner. Small nails are driven through these cleats at each place they cross. Then mark around the paper to obtain the correct size and cut out making a circle that looks somewhat like a waffle. Three of these are needed. Additional strength can be obtained by placing hardware cloth of quarter inch mesh between the cleats.

This completes your wax press and we are now ready to run the first batch of wax. The method I like best is to obtain another drum like the one from which we made the wax press and cut out the top of it. Into this we put about six or eight inches of water, take the heating element from the wax press, put into the bottom of the melting tank, bring the water to the boiling point, dump the wax in and cook it until it is thoroughly melted. This is then ready for the press. Obtain two or three heavy burlap bags, such as coffee bags, or even sugar bags will do. If sugar bags are used, place one bag inside the other to make double thickness. Hang this sack inside of your wax press, first removing your heating element from your cooking tank and putting it into your wax press with just enough water to cover the heating element and bring to a boil. Then put in one of the slatted partitions, hang your burlap bag inside, fastening it to the top of the wax press with two U-shaped irons, or a couple of old scale weights. Now dip the wax from the cooker into this bag until the bag is half filled, fold the bag over several times and pin with a nail. Then place in one of the partitions, then another sack of wax, then another partition and then the spider. Now place the cross piece into the handles and bring the screw down into the spider. Care must be taken at this point for if you have a little too much water your wax will be up to the outlet level and will flow out as soon as you start to squeeze. A little practice will enable you to judge the right amount for best results. Very little pressure is applied at first and a very small stream of wax is allowed to run off being caught in an open vessel from the outlet pipe. After you are sure the wax has been thoroughly heated and the water has started to circulate around it, pressure is then applied gradually and a very small amount of water is added to keep the small stream of wax flowing. The water can be introduced by a hose below the surface to prevent the wax congealing. Do not try to hurry the operation or you will obtain a dark colored wax. Take plenty of time and gradually apply pressure. It will take about two hours to run a batch. When the wax quits coming to the surface and only water comes off, the valve at the bottom of the tank is opened and the hot water allowed to run off. Then release the pressure by unscrewing the vise, remove the spider and with pliers pick up the sacks of slumgum, empty them into an open box and shake the sacks out to be used again.

This press is capable of 200 to 300 pounds of finished wax per day, used in the manner described.

If you have an ABC of Bee Culture, you can obtain a good idea of all details of this press, as it is exactly like the Hershiser Press in operation as described therein.

A Comparison of Package and Colony in the Orchard

By Geo. Harrison,
Virginia.

There has bee quite a little printed in the bee journals during the past few years about the relative merits of package bees and overwintered colonies in orchard pollination. The package producers and the editors of the various bee magazines have led in these writings, probably because they realized the necessity of convincing the orchardists that package bees are satisfactory for this purpose.

In 1931 a fruit grower and I decided to give package bees a trial. Previously we had used a few small packages to boost some poor colonies. Thirty-five five-pound packages arrived just as the apples were coming into bloom. Twenty were with queens and fifteen were without. The fifteen without were united with fifteen which had queens, making fifteen ten and five five-pound packages. Seventeen were hived in Modified Dadant hives on drawn comb and foundation.

Careful observations were made of the difference in flight between the packages and the overwintered colonies. We observed that seventy-five per cent or more of the overwintered colonies were flying as well or better than the ten-pound packages and that the ninety per cent of the overwintered colonies were flying better than the five pound ones were.

In spite of the fact that colonies recommended for pollination supposedly contain eleven to thirteen frames of brood, these, before going into the orchard, had only from four to nine frames. As to the surplus honey stored, there was a marked difference in favor of the ten-pound packages. Some of them gathered nearly a full Modified Dadant extracting super of apple blossom honey. It took quite a little explaining to make the orchard man understand where most of the honey the established colonies were gathering was going. Apparently the packages were doing much better than the overwintered colonies. This was the first time I had ever realized how much honey a colony in an advanced stage of brood rearing would consume.

All colonies came out of the orchard in fine shape, and I was delighted with the prospects. However, at the end of the season the average production of the overwintered colonies was eighty-three pounds; the average production of the packages was zero, minus some stores for the winter use. In other words, they did not produce enough on the average to see them through the winter. To me it was just as startling to see the supers of apple blossom honey produced by some of the ten-pound packages melt away after they had left the orchard as it had been to see them being filled during the bloom. The explanation, of course, is obvious. The package hives were filled with bees unfit for field use, and the original bees were all dead. Had sweet clover been plentiful and productive they would have been in prime condition for a good harvest. It was not, and the twenty-five colonies had nothing to do for the rest of the year but rob and consume what honey they had gathered.

In this part of the country, package bees do not prove profitable when the main flow is early and sweet clover is scarce.

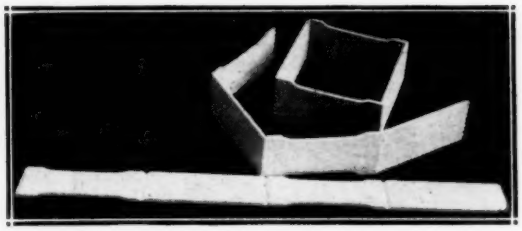
Higher Prices Through Grading

We obtain sixty cents for our select brand of honey while the general run of honey sells at forty-nine cents. We carefully grade for color and flavor from white extracted combs only and sell the select brand to those who want only the best and are willing to pay for it. Our sales are increasing from year to year on this item.

The remainder of our crop is packed and sold as general run honey with no evident ill results having taken out the select. We run all of our crop directly from the straining tanks into five and ten-pound pails and let the honey granulate as early as possible and sell granulated only. We thereby retain almost, if not all, of the original natural aroma.

E. F. Strayon,
Nebraska.

[Good for you, Strayon! That's the checker. The American public has been fooled into thinking that liquid honey is preferable.—Editor.]



The Comb Honey Section

By Frank C. Pellett.

AT the time Langstroth was struggling to find a way to give the beekeeper full control over his bees by means of combs which could be removed at will, many others were seeking better methods of harvesting the honey crop. Among those who were endeavoring to simplify honey production was J. S. Harbison of California. To him belongs the credit for the invention of the first comb honey section. This he designed on Christmas day, 1857.

As used by him the sections were crude as compared to the ones we know today but they were a great step in advance of the still cruder boxes in which honey of that day was produced. The sections were made of soft wood; top pieces 1½ inches wide, 6¼ inches long, ⅜ inch thick; sides 5½ inches long, same width and thickness as the top. The bottom was a piece ⅝ inch square set with one edge up and the opposite one downward, the edge flush with the end pieces. A triangular comb guide was put in the center of the top piece and all nailed together with ⅞ finishing nails.

This section held about two pounds. The following year Harbison produced some honey in sections and exhibited about 500 pounds of such honey at the California State Fair at Maryville in September, 1858.

It did not come to the general attention of eastern beekeepers until 1873 when he shipped the first carload of section honey to Chicago. Once an idea of importance is brought to public notice, improvements are sure to follow and soon all kinds of modifications of the Harbison section were offered.

In the April issue of Gleanings, in 1876, A. I. Root quoted C. O. Perrine to the effect that there was a great need of a uniform section to simplify the problems of the honey dealer. In that day most supplies were made at home and, of course, sections were made in all sizes and fastened in various ways. Out of the numerous suggestions made by his correspondents, A. I. Root devised a square section with all four sides of equal size. The four pieces composing the section were dovetailed at the corners. This he called the Universal Section.

Following Harbison's patent of the honey section, George T. Wheeler, of Mexico, New York, applied for a patent on a similar section made of strawberry box material and used in connection with tin separators. Wheeler appears to have made no important improvement in the section but his separator was a step in advance and separators became an important part of the equipment of the comb honey producer.

One more improvement remained to be made, the one-piece section. This was perfected by a man named Forncrook who was employed in the factory of Lewis and Parks at Watertown, Wisconsin. A picture of this one-piece section with its V-shaped grooves was published in Gleanings in 1879.

With the perfection of the section, comb honey came into great popularity and for a period of about twenty-five years the leaders of the industry were comb honey producers and much of the space in the bee magazines was devoted to a discussion of the problems connected with its production and marketing.

How to Mark Queens

Get a can of Duco enamel of any color and a small camel's-hair brush. Place a spot of color on the top of the thorax of the queen. The mark will usually last two years.

A good plan is to go into the cab of the car; shut the doors and close the windows; hold the queen by the legs with the thumb and middle finger with the queen resting on the ball of the index finger of the left hand. Then, with the brush in the right hand, it takes but a moment to touch a spot of color on the thorax. Hold the queen about 20 seconds until the color dries. It dries quickly. Then put the queen back in the cage without attendants and introduce her in the usual way.

Sure, It's Maurice Dadant!

Better late than never! The Human Puzzle in your December issue, I recognized at once as M. G. Dadant; but since I am way off here in western Australia, I cannot expect to stand the least chance of being in among the first of the correct guesses, but I am very sure to be in the last three!

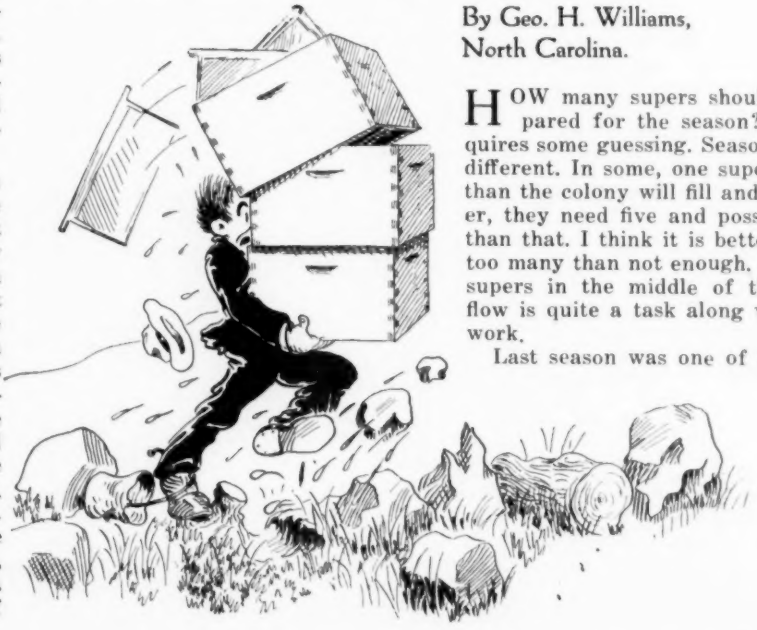
The November Puzzle is said to be the biggest one with fifty-eight guesses but I'll bet that December (the last one) tops the lot. [He was right!]

I thought you might appreciate a word from "Sunny Australia."

W. J. Joyce,
Claremont, W. Australia.

Were You Ever Short of Supers?

By Geo. H. Williams,
North Carolina.



HOW many supers should be prepared for the season? That requires some guessing. Seasons are far different. In some, one super is more than the colony will fill and in another, they need five and possibly more than that. I think it is better to have too many than not enough. Preparing supers in the middle of the honey-flow is quite a task along with other work.

Last season was one of those that

required several supers. I use two kinds—shallow extracting and section supers. I increased my section supers a third last spring and had them ready before the season began. The season opened with a rush and soon most of the supers were on the hives and the middle sections about ready to seal.

There I was in the midst of a good honeyflow with no supers and a busy time without that extra work, so I ordered another lot of sections which was sent at once and I began to put them together and fill them with foundation. Then to the bee yard to find the supers that were the nearest finished.

Bee escapes were placed under them and in a few hours the bees were out. The finished sections were taken out of the middle and new ones with only full sheets of foundation put in their place. The escape boards were then removed.

The bees went to work at once. This plan was kept up as long as the prospects were good and then the partly filled sections were put in the middle and empty ones on the outside to be sure that those which had been started would be finished.

After the flow closed and all sections were taken off, a careful record which I had kept gave me an average of 47 finished sections to each super!

I do not know that I lost so much honey from shortage but the work was much greater in a busy season so hereafter I intend to prepare more supers. Even if I do not get them full, they will keep O.K. if properly taken care of.

Pikes Peak Region Beekeepers Suffer 50 Per Cent Loss from Amer. Foulbrood

Beekeepers in the Colorado Springs region have suffered a fifty per cent loss in the last month from American foulbrood, according to an estimate made by Herbert E. Webb, a well known Manitou apiarist and for many years county bee inspector.

The loss has been greatest in Fountain Valley. Elliot Brothers and Miller and Sons, two of the best known firms operating in this region have quit the business there, and Henry Sloan and B. A. Story, who also had large establishments there, have moved their bees to the San Luis Valley.

Webb blames the terrific toll on lack of state law enforcement of laws designed to prevent spread of the disease. The Colorado association is backing up the national association, urging that every hive where traces of the disease are found in a single cell be burned immediately, but this has not been done generally enough.

L. S. Flint,
Colorado.

By Thy Work Ye Shall Be Known

By J. F. Diemer,
Missouri.

DO bees have the gift or the ability to distinguish the difference between a good queen and one that is defective?

Many writers claim that bees will accept a queen reared in the home yard more readily than one coming through the mail. This really means that a colony of bees is choicy and refuses to accept a queen unless she is without faults and is capable of taking care of the brood nest.

It means that the queen must be a good egg layer. In fact it implies that bees know what kind of work a queen will do before they see the results of her work.

The bees must be like the horse trader, that can point out defects and blemishes. A queen that comes through the mail is not full of eggs when she is introduced. Neither is the home grown queen full of eggs when she is released.

Many experiments have been carried out; many observations have been made to find out as much as possible about this difficult behavior as it affects queen introduction.

While putting a bar of capped cells in a queenless colony one of the cells was slightly jammed against the hive, making a dent in the cell. A few days later the colony was examined and you can imagine my surprise when it was found that the virgin in the dented cell had emerged and destroyed all the other cells. This queen was without wings. The bees allowed this destruction of perfectly good cells to go on and tolerated a wingless virgin to be at the head of the colony.

I have observed drone laying queens introduced and accepted. I have seen old queens accepted. I have found bees trying to raise queens from drone brood and from laying worker brood and I have given laying worker brood to normal colonies and it was as well fed and taken care of as brood from a fertile queen would be.

The fact that a normal colony will accept a drone laying queen, a wingless virgin, or a defective queen is proof that bees are not capable of judging a queen except by her work.

No effort is made to supersede a drone laying queen until her brood is partly developed and at a stage when the beekeeper can easily see it is all drone larvae. This would seem to be proof enough that bees cannot distinguish between drone and worker brood in worker cells until it is about half grown.

The experienced apiarist can see the difference as early as the bees can. The importance of this subject is apparent when we realize the effect such knowledge has in queen introduction. Many of us are inclined to credit honeybees with intelligence or reasoning faculties. It seems to me that it would be more just to the bees if we would give them credit for doing the things that they do by natural impulse, because the things a normal colony does are always perfect and always done the same way.

Here are fourteen things the bees do with perfect exactness, all by instinct. (1) The impulse to swarm. (2) Secretion of wax for comb building. (3) Comb building. (4) Feeding the queen for egg production. (5) Incubation of eggs by the creation of heat. (6) The care and feeding of the baby bees. (7) Preparation for swarming by building queen cells. (8) Sending out bees to locate a new home. (9) The destruction of cells after a swarm has issued. (10) Virgin mating with drone. (11) Collecting pollen and nectar. (12) Evaporation of nectar. (13) Clustering loosely or closely to regulate warmth. (14) Supersedure of defective queen.

Collecting propolis, carrying water, rearing drones, disposing of them—all of these things are done by natural impulse. Being choicy about the kind of queen we offer them cannot be instinctive, because introducing queens is not the natural way of requeening. All queens look alike to the bees. If the queen keeps the brood nest well supplied with eggs she gains the good will of the bees. If not, she is superseded.

(Please turn to page 268)

Problems in Queen Rearing

By Whitman Coffey,
Texas.

THAT branch of beekeeping which has to do with the breeding of bees is a most fascinating and intricate study. It might be said to comprise the selection of stock and the breeding of that stock in such a way as to secure progeny that are superior to the parent stock. In order to do this it is necessary to know the principles of breeding and how to apply them to the particular problem at hand. One has to be a good judge of bees also; and if he is going to make progress it will be necessary to keep a good many records. It is a very easy matter to secure a multiplication of numbers; it is far from easy to attain an improvement in quality.

In the first place every queen breeder, whether he is rearing queens for himself or for others, is faced with the problem of selecting stock to breed from. He may have an ideal type in mind as a goal to attain, or he may have in mind improvement in a general way. He may be buying breeding queens from others and taking a chance on securing results that are satisfactory. He may be infusing new stock into his bees each year in the hope that something worth while may result from this course. He may be choosing his breeding stock from among his highest producing colonies. He may be attempting improvement in a carefully selected foundation stock by an orderly system of selection and mating. He may have other plans or no plan at all. A good many breeders select queens from among those colonies having the largest yield. In this connection it is gererally desired that the worker bees and drones be of uniform color. Then we want to know the individual characteristics of the queen, because we all know that very much centers around that most respected and most belabored individual in the colony, the queen. All the old bee masters realized the importance of the queen, and all successful honey producers of today realize that success cannot be attained without a good queen. So we want to know that the queen is prolific, has a compact brood nest, lays heavily at the right time and under the right stimulus, has the correct shape of body, is long lived, etc. We also want to know that the bees are not unusually inclined to rob, that they do not stick things up with propolis, and that they are easily handled. Having selected a queen, we next want to know just how the bees are going to be propagated in order to secure queens that are equal to or superior to the parent stock. Is it a matter of mating or is it a matter of developing the larvae in the proper way?

In the field of genetics there have been two schools of thought: One emphasizes heredity, the other emphasizes environment. One states, for example, that the kind of queen you rear, good, bad, or indifferent, depends on the amount of feed which the larva received, the age of the larva selected for grafting, the treatment the queen receives before and after mating, etc. The other side says that if you have good stock to breed from and use reasonable care in rearing, you will get good queens whether they are large or small. It is now coming to be recognized that heredity determines the capacity or possibilities of an individual, and that environment determines to what extent those possibilities and capacities will be developed. According to this thought you would have to begin with good stock in order to secure good queens. Then you would want to know that the larvae were of the right age and of high vitality; and you should see that they receive plenty of nourishment and proper incubation. In other words, conditions for development should be as nearly ideal as possible.

Let us assume that we have selected for a breeding queen one that has headed a colony that has a high record for honey production. The claims that have been made for such queens vary in form and veracity. Many such claims constitute advertising matter, as one would expect. The impression is left that the progeny of such queens will be able to do as they have done. We might expect it to be true since the pedigree of the drone would not have anything to do with the performance of the first generation of queens. In my experience I find that the offspring of a high producing queen selected at random are likely to be extremely variable. I suppose that this is due to crossing. That is, it could be accounted for by the fact that the bees have not been bred in such a way and for a sufficient length of time to fix the characteristics desired so that they could be transmitted firmly to the offspring. Another way of stating the matter would be to say that most of our Italian bees are heterogeneous and not homogeneous. Therefore, in order to secure uniformity, it is necessary for us to breed in such a way as to eliminate this variability. This might be accomplished by line breeding or in an inbreeding. In breeding dairy cattle, it is common practice to mate a bull to his full daughters for two or three generations. In breeding bees this could not be done of course. However, if one desired to do so, he could closely approach such breeding with bees. In breeding bees we are at an advantage over livestock breeders due to the fact that we can propagate more rapidly. At the same time we are at a disadvantage due to the difficulty of controlling mating, and also due to the difficulty of getting accurate knowledge of bees. For instance, it is a tedious matter to measure the length of bees' tongues and the capacity of their honey sacs. The successful queen breeder must, therefore, be a very close observer of minute details.

If everything possible has been done to secure the best of stock and get that stock properly mated, it yet remains to see that the young are properly developed. It is sometimes asserted that queens produced during the swarming season or under the swarm impulse are superior to queens produced at other times. Queens produced under the supersedure impulse are also said to be good queens. If larvae of a high vitality are important we would not want to duplicate the supersedure method. It is a well known fact that the sperm cells of stallions, bulls, and other livestock, are reduced in number and vitality when such animals are overworked in breeding. It would be reasonable to expect without a scientific study that the same would be true of queens. In the spring, after a queen has had a resting period, one would expect her to produce eggs of higher vitality than at other times. Improved results might be secured by using young queens for breeders where difficulty is experienced in getting larvae of high vitality. In this connection it has been advocated that breeding queens be kept in nuclei. If so-called natural methods of bee propagation are superior because they secure to the developing larvae ample food, it should not be difficult to secure good queens, because it is usually easy to get the bees to feed larvae plentifully, It might be argued that queens produced by the swarming stimulus are inherently superior to supersedure queens or queens produced from a colony selected at random, on the ground that the strongest colonies swarm; and the colony that swarms

usually has plenty of honey and bees, indicating that, if man has not interfered, it has excelled the other colonies in storing honey. My opinion is that queens produced under the swarming impulse are in no way superior to queens produced at other times, other conditions being the same. If a colony has plenty of bees of proper age and is well fed, one can usually rest assured that larvae given to its care will be well fed.

Will Sericea Replace Sweet Clover?

By Robert M. Mead,
Vermont.

Can you imagine a plant that has all the good qualities of sweet clover and alfalfa with none of the bad faults of either? Well there is such a plant, and while it may not have quite all the virtues assigned to it by its friends, it certainly is a remarkable plant. One that may easily replace sweet clover or alfalfa in many localities.

This newcomer is Lespedeza. Not exactly a newcomer either for it has been in this country a long time. But it is only in the last few years that it has become widely distributed. Now it has so many champions that no one knows just where it will stop.

It is a legume and what a legume. It will grow on soil that it not suitable for either sweet clover or alfalfa. It will stand more hot weather and more drought. It makes a finer hay. It is excellent pasturage. I can not tell you its faults because every one I have written to about it seemed inclined to keep the faults, if any, to themselves. It is being recommended and pushed by County Agents, State Colleges and by the farmers themselves. Without exaggeration it bids fair at present to become one of the foremost forage crops of the West and South.

But as a honey plant it is the day's big question mark. A. J. Pieters, Principal Agronomist of the Bureau of Plant Industry, informed me that Lespedeza Sericea is visited freely by the bees while in bloom. But he was very doubtful as to its value as a honey plant. It may be the bees were after pollen. No one seems to know definitely but all seem agreed that its value as a honey plant is doubtful. Certainly the Lespedezas that are more apt to be grown over the northern part of the West are of no value to bees whatever.

FOREIGN

The "Apiculture Belge," published at Charleroi, Belgium, informs us, in its April number, that the King of Belgium, Albert, who died accidentally during the past winter, was the owner of an apiary, the honey being distributed annually to the poor.

A Medieval Honey Law

By H. A. Schuette,
Department of Chemistry,
University of Wisconsin.

THOSE who have interested themselves as historians in the legal aspects of the movement for reform in the preparation and sale of man's food point out that one should think in terms of centuries when measuring the age of the Federal Pure Food and Drugs Act of 1906. Apropos of this statement it may be of interest to recall a medieval ordinance prescribing the sale of honey which, although brought to light some seventy years ago, appears to have been overlooked to date.

Five hundred years ago—it was that century which saw the rise of Joan of Arc to immortal fame, the discovery by Gutenberg of the art of printing with movable type, and the most memorable sea voyage of all time, that grand adventure of one who setting out to chart a new route to India, found the Americas a barrier to further progress—there were being enforced a number of laws or ordinances regulating the sale and production of honey, milk and other foods of the inhabitants of a certain city in southern Germany. And, in order to complete the record, it might also be added that certain other foods, notably bread, meats, beer, wines, lard and fatty oils, had received an even earlier statutory attention, a regulation which had begun sometime during the two preceding centuries. The city about which this account centers is Nuremberg; the time, the Renaissance period of the Middle Ages.

For making available these old laws, the information concerning them, we are indebted to Joseph Baader who resurrected them because of their antiquarian interest and published them in 1861 as a brochure in volume 63 of **Bibliothek des Litterarischen Vereins in Stuttgart** under the title "Nurnberger Polizeiordnungen aus dem XIII bis XV Jahrhundert" (Police ordinances of the city of Nuremberg of the 13th to 15th Century). It appears that these laws had been written, for printing was not then in vogue, on sheets of parchment and that these have been preserved in the form of two books each of which is provided with iron buckles. These books represent different periods of law-making. One contains the laws enacted apparently during the last decades of the thirteenth century and the first half of the next; the other those passed from time to time during the following hundred years. All of them are formulated in words many of which are either obsolete or else only suggestive of their present spelling. Besides which, it appears that the framers of these laws probably resorted also to the use of dialect in expressing themselves.

For this reason a reproduction of one of these ordinances in its original verbiage, illustrative of the language of the Southern Germany of five centuries and more ago, might profitably precede it in its translated form. Then, too, there are doubtless some among those who read this account who might prefer to make their own interpretations. That which follows is the result of a free translation of that ordinance which not only regulates the sale of honey but in a sense defines it as well.

Von Honig und Dessen Verkauf

"Unnsere herren vom rate haben umb gemeines nutzs und notdurfft willen und auss mercklichen ursachen sie dartzu bewegennde gesatzt, ernnstlich gebietende, das furbas kein ir burger oder burgerin, noch yemannd von iren wegen einich honig hie kauffen oder verkauffen sol, es werde dann zuvoran von den gesworen honigmessern geschawet und gemessen. Dessgleichen sol auch kein burger, burgerin oder ir gewalt einich honig hie versieden dann daz durch der geswornen messer rate tuglich und gut darzu sey, bey puss ein pfund newer haller.

"Nachdem von dem newen honig, der prut und annder geprechigkeit halben, den menschen, das nyessend, und besonnder swangern frawen merklich krannckheit und schaden entsteen, darumb das zu furkomen setzen und gebieten unnsere herren vom rate, das hinfur nyemands er sey burger oder gast, alle iar vor unsér lieben frawen tag, alls sie geborn ward, einicherley new honig hie in der stat noch in einer viertel meil wegs umb die stat vail haben oder verkauffen sol. Aber nach demselben unnser frawen tag mag ein yeder sein honig nach der stat ordnung und gesetz vail haben und verkauffen. Und wer das uberfure, dem wolt man das honig nemen und solte darzu gemeiner stat zu einer yeden fart zu puss geben ein pfund newer haller."

In the translation the above ordinance reads, "It has been decreed and strictly forbidden by our aldermen, for the general benefit and good of mankind and for numerous other reasons, that henceforth none of our citizens, male or female, or anyone in their employ may buy or sell any honey except that which has been examined and measured by duly appointed honey inspector. And, by

the same token, none may use any honey which has not been declared fit for consumption by them. Violation of the foregoing act is punishable by a fine.

"Since the use of new honey, or honey contaminated with brood or other foreign matter, may cause sickness and distress in adults and infants, and particularly in pregnant women, it is hereby decreed and ordered by our aldermen that henceforth nobody, be he a citizen or transient, may sell or offer for sale any variety of new honey within the city limits, or a quarter-mile thereof, before the anniversary of the birthday of the Virgin Mary. But after this day anyone may sell his honey, or offer it for sale, providing he does not transgress the laws of the city covering this matter. Anyone violating this law will lose his honey by confiscation and will be fined for each offense."

In order the better to appreciate the implications of this ordinance, one must reconstruct the picture as it was approximately five hundred years ago. The intellectual outlook of humanity at that time was narrow although, to be sure, it was beginning to broaden under the influence of the advent of the Renaissance of learning. Chemistry was still the hand-maiden of the black art of alchemy whose objectives were the discovery of a method whereby might be brought about the transmutation of base metals into gold and the solution of the problem of indefinitely prolonging life. It offered practically nothing by way of analytical methods with which foods might be subjected to scientific scrutiny. These were to come later with the activities of Paracelus (1493-1541), the "Luther of medicine," who has been credited with being largely instrumental in directing chemistry towards more purposeful ends. Sometime during the period when the foregoing honey ordinance became a law alchemy, having reached its fullest development, was heading for its decline and chemistry was to make a new alignment, this time with medicine.

So it is not surprising that man should have held certain convictions concerning his food which today appear to be nothing short of superstition. His concern about the presence of brood and other forms of foreign matter in honey strikes one as rational, yet how odd his view that new honey is the cause of gastronomic disorders, a food not to be partaken of by the expectant mother, nor to be fed to an infant!

The designation of an early September date (the anniversary of the birthday of the Virgin Mary) as the time when the sale of honey might lawfully begin, presumably on the assumption that not until then is it fit for human consumption, appears at first thought to be an arbitrary ruling. Yet, after all, it is probably a reflection of the religious convictions of the times. The release for sale of man's chief sweetening agent on a church festival day is probably a natural consequence of this situation.

Whether chemistry or its applications actually played a part in the activities of the honey inspectors remains a matter for speculation. From what has gone before, the presumption is that it did not. A chemical examination, as we understand it now, was out of the question for reasons mentioned above. The inspector's duty had apparently been performed when he had passed upon the condition of the honey, had satisfied himself that the buyer was not to be a victim of either short weight or measure, and that the honey, meeting the standards of the day, was ready for consumption.

We have gone a long way in the production, merchandising and analysis of honey since the day when the "duly appointed inspector" of medieval Nuremburg passed judgment upon this food. Its adulteration—honey in the comb for years carried a sort of implication of freedom from this charge — could not have been the problem that it was to become in later years. With the march of time came the introduction of cane sugar, soon to crowd honey out of the prominent place that it had so long monopolized in man's diet; the unlocking of the secret of the composition of honey; and then, with the discovery that a syrup can be made from corn starch and one of honey-like sweetness (invert sugar) from sugar itself, attempts on the part of the dishonest grower or tradesman at unlawful gains by the application of this knowledge to the sophistication of our first sweetening agent.

The statement has been credited to the late Dr. Harvey W. Wiley, "the father of pure food laws," that before 1906 there were probably few foods in the United States more subject to adulteration than extracted honey. Some State legislatures were indeed even earlier cognizant of this condition. Witness, for example, the Wisconsin law-makers of 1881 who with apparently an evangelistic faith in the efficacy of the measure, took steps to curb the practice by making it mandatory upon anyone who sold or offered for sale honey to which had been added glucose or any other substance, to mark the package with the words "adulterated honey." These words, placed in such a position as to be plainly seen, were to appear in letters "not less than one-half inch in length, and breadth in proportion"!

Adulterated honey, once declared by Dr. Wiley to have been not infrequently found on the market, seldom comes to official notice. The pure product, honestly labeled, has taken its place. One need only make a statistical review of the reports of the activities of the agencies which have been entrusted with the enforcement of the Federal Food and Drugs Act of 1906 for proof of this assertion. Exactly 19,850 Notices of Judgment, reporting the action taken on foods and drugs seized in interstate commerce under authority of this law, have been published at this writing. Approximately one out of every thousand prosecutions for some form of violation of this act concerns honey. It is a record exceeded in that list by but few other foods!

A similar survey of the activities of the food law enforcement officials of the several States for the same period would probably reveal the same general situation with respect to honey. The reports of the Wisconsin authorities, for example, show that since 1907 there have been examined approximately 87 honeys, and that only eight of this number were found to have been at variance with the statute definition of this food.

If a record were available in the city of their origin of the seizures and prosecutions for the period in which the above-cited medieval honey law was in force, what story would it tell? The question is an academic one, its answer anybody's guess.

By Thy Work Ye Shall Be Known

(Continued from page 265)

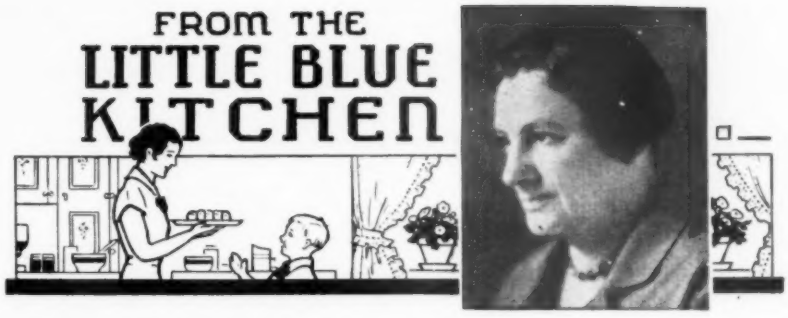
Accidents sometimes occur in normal colonies. Nature made no provisions in the instinct of the bees to take care of accidents. In nature if a colony becomes hopelessly queenless, there is no remedy. If bees make the mistake of bringing disease to the colony, there is no remedy. Outside of their natural instinct, bees are helpless. We do the bees an injustice when we accuse them of being intellectuals. We do not believe that bees are good judges of queens, neither do we believe coming from a distance makes them more difficult to introduce.

Competition Among Plants

We often hear beekeepers say that a plant doesn't produce honey for them. Competition among plants sometimes causes bees to ignore a less attractive plant for a more delectable one and then folks may say that plants like the carrot and sunflower are no good as honey plants; yet in poorer sections of the country, bees work on them because there is no better pasture. I have discovered that bees prefer blackberry to tulip trees and that you won't get much tulip honey if there are blackberries in bloom in quantity at the same time.

Edmond Fontaine,
Maryland.

FROM THE LITTLE BLUE KITCHEN



ROMANCE AND RHYME OF JUNE

A June bard is most fortunate,
For then all life's a-tune,
And Romance, like a butterfly,
Has burst her gray cocoon!
So, when he'd write of roses, bright,
With which his path is strewn,
His task is light, for that fair flower
Has long been "Queen" of June!

'Gainst charms of "sweet girl graduates"
No poet is immune,
And so about "Commencement Day"
He pens a touching rune.
If youth's sweet romance be his theme,
He writes about the moon
Which shines its very loveliest
On sweethearts of the June!

In sequence, true, come lyric lines
Of souls with joy a-swoon,
Because to them Life's lavish hand
Has given Love's dear boon.
And then he tells of wedding bells,
A-pealing at high noon,
For a proud bridegroom who has won
A lovely bride of June.

The poet, then neath "big top's" shade
Laughs at a clown-buffoon,
And adds a stanza to his song
About a child's balloon!
And when at starlit eventide
He hears a soft bird-croon
On that high note of Mother-Love
He ends his song to June!

—Lida Keck-Wiggins.

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WITH the return of good times, fashions for June brides are normally beautiful again, and it really does one's heart good to turn the pages of the fashion sheets, window shop on Fifth Avenue (as Honey Lady does sometimes when she runs down to the big city occasionally) to see bridal costumes pictured, or modeled, in lovely, feminine fabrics and styles and in beautiful spotless white! It may have been in keeping with depression days to be married in black, as fashion creators in Paris decreed last year, but Honey Lady, for one, is just a bit old-fashioned, not to say "superstitious" to have been much impressed with the idea. Of course one would naturally be able to make more practical use of a black dress later on, but one's wedding dress should be a thing apart, kept in lavender and tissue paper to hand down to one's daughter. This may be thought to be "foolishly sentimental," but what of it? It's June isn't it? It's the month of roses and glorious moonlight and June brides, so let's BE sentimental, God love you, and LIKE it! Anyhow if you'll observe closely, those who pooh-pooh sentiment are almost sure to have folded away somewhere a handkerchief with a bit of that same laughed-at element in its story; a baby's shoe (Honey Lady saw one once tumble out of the stamp desk of a hard-headed business man; saw him blush, pick it up quickly and slip it back into its drawer; smiled inwardly at his confusion when he muttered "That was one of my baby's first shoes. She . . died . . you know!" Nor was Honey Lady surprised at all either by the flushed cheek or the dewy eyes of the man who a moment before had been as "hard as nails" in a business deal). Folks are sometimes so ashamed of being thought sentimental, they try to pin the trait on somebody else to take eyes off their own "weakness." Incidentally isn't that the way with all folk with faults of any kind? The thing they criticize most in others is very, VERY likely to be their own secret, but besetting sin?

Enough of gypsying, however, let's to the honey pots, and what summer magic can we conjure for this June issue of American Bee Journal, I wonder!

Well, for one thing, there is that oh-so-good breakfast dish Honey Lady "cabbaged" off the wrapper of a well-known toasted rusk box. Its title made immediate appeal to her and here it is with quotation marks honestly around it, so that nobody can accuse Honey Lady of claiming it as her own "get up." However, she CAN claim that she tried it with rounds of ordinary toast, and it was no doubt as good as if she had had the commercial rusks for the experiment. The honey made by the bees in this remarkable Dutchess County, N. Y., is a blend of all the nectars, Honey Lady was told by Mr. Joyce, president of the county beekeepers' association. It must BE for its flavor is like a bouquet of flower scents. But to the recipe! It is called "Honey Boys," and here's the how of making it.

"1 tablespoonful of butter
6 rounds of toasted bread
1½ cups drained, crushed pineapple
4 tablespoonfuls honey

"Butter the toast rounds. Mix pineapple and honey, and spread over heated toast." This makes six portions and the only way for you to know better than you do now how delicious it is, is for you to make up a "batch" of these "Honey Boys" for breakfast!

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Sometimes one can't help overhearing telephone conversations; especially when the instrument is a community utility, as is the one used in the "Quarters" where Honey Lady now lives. Usually any words, so heard, are allowed to "go in one ear and out the other," but recently this is what Honey Lady heard, and she admits she "picked up her ears" and listened shamelessly; moreover interviewed the telephoner afterward! What Honey Lady HEARD was:

"Yes, she had a very sore throat, but I hustled right up and gave her honey-and-lemon and she was able to go back to school next day." Honey Lady said to Mrs. Halpin later: "I heard what you said over the phone about giving Betty honey-and-lemon. Would you mind telling me for THE BLUE KITCHEN what proportions you use?"

She is a lovely, lovely little neighbor . . always slipping in and out of these quarters doing some sort of a good deed in more than the Girl Scout quota each day, so she smiled radiantly and said:

"Why of course . . ! I usually take a half cup of extracted honey and add the juice of one lemon if the lemon is sufficiently sour to make the whole mixture tarty. If not, I add a little more juice. Then I just let Betty drink it until it is all gone . . . I never have to have a doctor when she has a sore throat or cold. This honey-and-lemon mixture ALWAYS fixes her up in no time." So that's one result of eavesdropping Honey Lady's glad to pass along.

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And now that it's strawberry time again, or mighty near it, here's a nice new recipe for strawberry shortcake with honey sweetening. Hope you'll like it at your house as well as we do at ours!

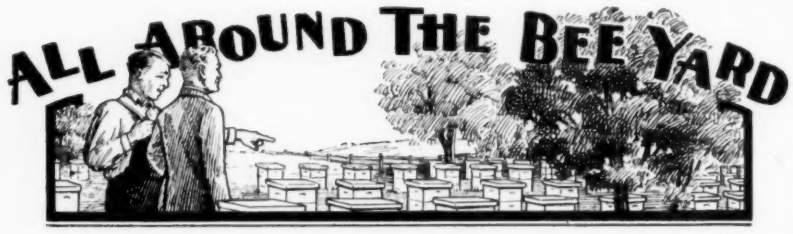
Strawberry-Honey Shortcake

1½ cups flour
1 cup sweet cream
2 tablespoonfuls butter
2 teaspoons baking powder
¾ cup honey
1 egg

Directions: Beat egg very light, add butter blended with the honey; cream all together; add cream then the flour and baking powder after thoroughly sifting them together. Bake in two layers. Remove from oven, split and butter, spreading with mashed strawberries (sweetened with honey) between cake and serve with whipped or plain cream.

— : —

A famous authority on dietetics says: "In addition to the wholesomeness of honey, it keeps foods fresh, because the honey in the products absorbs water vapor from the air."



By G. H. Cale

CONSIDERABLE anxiety is shown to date over honey prospects in the sweet clover region due to the unprecedented dust storms and extreme drought. Dust has been blinding; the winds prevented the bees from flying. In some places foreign soil has covered roadsides, requiring snow plows to remove it.

The extreme drought has hurt new sweet clover seeding in field plantings to some extent but new sweet clover in volunteer locations seems to be all right. Sweet clover for the current year's production is not yet suffering and rains at this writing over much of Illinois, Iowa, Missouri, Nebraska and parts of Kansas have relieved the situation at least for the time being.

— o —

The sweet clover range depends on the caprice of weather. In the sweet clover region, beekeeping has become almost a Nomadic occupation changing with the shifting clover acreages from year to year. The problem now seems to me to get a good place for fall, winter and spring and then to move bees wherever the sweet clover may show itself to be the best for the season.

— o —

Edmond Fontaine, of Maryland, writes about bushel basket swarms from his Modified Dadant hives. The prime swarms from these hives are truly large. Supersedure swarms with virgins are no larger than those from other colonies. This morning, a virgin swarm, probably from supersedure cells in a Modified hive, came out to cluster on a blooming locust tree. It was about as large as a good Derby hat and right in reach. Such is the irony of fate! Had it been one of those large swarms, it probably would have been at the top of the tallest tree.

— o —

This admits that swarms come from Dadant hives. So they do; about five out of every hundred in an average season. At times this has been double but I have never seen it more.

— o —

We have been using some of those feeders featured by Mr. Mavie, the Brother Adam's Feeder. We have used them on packages, on early divides and on colonies needing food. They work well in all cases. After the hive is level, the feeders are quite easy to fill and the colony is not the least disturbed. I think they are at their best on a growing colony like a divide or a package.

— o —

In that remarkable story in the March number by George Polhemus, of Iowa, giving an average per colony production for packages hived on combs on May 6, of 416 pounds per colony, I note he says: "The leather colored Italian queens produced at the rate of about 450 pounds per colony. The minimum in this group was 390 and the best 520."

That's well for the leather colored bees. After all is said and done, having tried Carniolans, Caucasians, Golden Italians, Hybrids, and blacks, I have about come to the conclusion that the three-banded bees are as good as any. Personally, I like bees not too far removed from natural Italian importation. The Italian bee, as it comes from Italy, is more like the Cuacasian but does not have its bad habit of excessive propolization.

Feeding With Mason Jars

By Edmond Fontaine,
Maryland.

Feeding bees is not so simple and easy as would appear, especially when we try to use a Mason feeder in front of the hive either to supply stores or stimulate brood rearing. An amateur would be almost sure to start robbing and do more harm than good.

If you have only one hive and no other bees, it is easy; but if you have ten hives and four of them in need of feeding, these four will most certainly be robbed out by the stronger ones when feeding this way.

Weak colonies are usually fed syrup in September to stimulate brood rearing and to enable them to get through the winter. They are fed again in spring. If you use a Mason feeder, block up the entrance to leave only an inch hole for the bees to enter and keep this entrance on the far side from the feeder so the guards can fight the robbers to better advantage. Also tilt the bottom board slightly back so that syrup will not run out of the front.

For temporary feeding to stimulate the queen this will work if you are on the job to watch. In fairly warm weather with no bees flying, close the entrance entirely for a short time.

The best way, of course, is to set the Mason jars over the top of the frames and then put on an empty super to keep the syrup in the jars warm and safe just as is done when feeding with friction top pails.

A cradle to hold the Mason jars inverted is provided by a board five by seven inches with large nails driven in at an angle to set the tops of the jars in and hold them. Put plenty of large tacks under the board to make a bee space as well as under the feeder for the same purpose. For quick feeding you can put in two to four of these jars for each hive or use a gallon friction top pail. I like the jars best.

Don't let the syrup fall directly on the combs of bees. The cradle base described forms a platform to spread the syrup so the bees can get it easily with less muss. The entrance must be contracted for short periods if robbers are about. Remember, robbing is serious. Beginners do not recognize what is the matter when the apiary gets in an uproar and every bee is turned against his neighbor.

[Never feed bees in front if you can help it. A jar of syrup placed near the entrance will not only attract the bees of the hive but other bees, even though you do not have any more; and bees becoming accustomed to food near the entrance will soon learn to rob.

Feeding should be done on top of the combs as Mr. Fontaine describes and as near as possible to the cluster of bees. The jars should be supplied with covers with small holes so that when a jar is turned upside down, the food will leak slowly, being retained only by air pressure. With the super about the feeder as described by Mr. Fontaine, the food will be available to the bees in any weather and away from the reach of robbers.

Remember you must by all means avoid robbing in the apiary for there is nothing that demoralizes bees as much as robbing. There is no need of robbing at all if colonies that are fed are well protected and not fed too freely.—Editor.]

Another Case of Ignorance

Bedieger, of Texas, reports wax buyers crowding the rural districts of that state, buying beeswax at seven cents a pound. That's another evidence of ignorance on the part of men who evidently do not "have time" to read the bee magazines. They are like those who "don't believe in book larnin' nohow."

Another evidence also of why every beekeeper should act as his "brother's keeper" in boosting for a good bee paper.

J. H. Sturdevant,
Nebraska.

THE EDITOR'S ANSWERS

When stamp is enclosed, the editor will answer questions by mail. Since we have far more questions than we can print in the space available, several months sometimes elapse before answers appear.

STORING POLLEN

How long under what conditions can pollen be stored for use for package bees the following season? We have a hundred inches of rainfall here, so you see it is very damp.

WASHINGTON.

Answer.—The length of time during which pollen will keep fit, for the use of the bees in rearing brood, depends upon the weather conditions in the locality where the pollen is gathered and stored. There was a very bitter discussion of that matter, some sixty odd years ago in the bee magazines. A beekeeper by the name of M. M. Baldridge, living in northern Illinois, recommended the saving of combs of pollen and giving them to the colonies of bees in spring. A Catholic Canon by the name of Colin, living in Lorraine, contradicted this statement and stated that all the bees could do with the stored pollen would be to dig it out of the combs and throw it away. The difference between them was in the location. Northern Illinois is dry and cold in winter, while the location of Canon Colin was in a damp part of Lorraine. The difference was not in the men's knowledge but in their locality.

The only thing for you to do is to ascertain whether, in your locality, the pollen will retain its quality and act accordingly.

BUYING DISEASED EQUIPMENT

I have a chance to buy some equipment that has had disease at bargain prices. How can this be treated so that there will be no chance for me to introduce foulbrood to my apiary? It consists of Modified Dadant hives and honey tanks, extractor and knives.

MINNESOTA.

Answer.—You must be exceedingly careful with material which has contained foulbrood. No combs must be saved. They must all be melted and the frames destroyed. The hives should be singed by coating them slightly with coal oil or gasoline and setting them afire for a minute or two. If you can secure a tinner's torch you can singe hives and material with little difficulty and that is really the best way.

Honey extractors, tanks, and all other paraphernalia may be sterilized with boiling water. Better boil them over twice, to do away with any suspicion of disease.

It does not pay to try and save frames from diseased colonies. Better burn them up.

CLEANING HIVES

I would like to know what to do with old hives where bees died last winter; before introducing package bees this spring.

The comb left is of course dirty and likely some moths will be found in the frames. Never have had any foulbrood.

SOUTH DAKOTA.

Answer.—If the colonies have not been sick with foulbrood, there is no danger in using the combs. Moths are not likely to be in them, for the cold that would kill the bees would also kill the moths. The only danger from moths is to come later if the combs are not occupied by bees.

You should examine the combs and remove all the drone combs and also the crooked worker combs if any. These may be replaced with comb foundation fastened in the frames.

When you introduce package bees in those hives you will have no longer any risk of moths or other troubles. But if there had been foulbrood in those combs, your troubles would just begin.

BEES WORKING DOWN

In a bee tree the comb is always started at the top and worked down and the brood is usually found near the entrance. Now if supers, or I should say brood chambers, were put on underneath the queen and brood, would she work down and the bees store honey over the brood as they leave the cells, and also would not the brood nest be found in the bottom chamber in the fall near the entrance providing no queen excluders were used? NEW HAMPSHIRE.

Answer.—Yes, if your colony is placed above a hive full of empty combs, the bees will work downward and make their brood nest, sooner or later, below the present position. The reason of this is that the bees always want their honey above them, so that they may be able to reach it when the weather turns cold.

In all hives of bees you will always find the brood combs at the bottom, except in extraordinary circumstances.

POLLEN SUBSTITUTE — SOAP ON KNIFE

(1) Would like some information on how to get bees to use flour as pollen.

(2) How to make soft soap to use on knife to cut foundation and also to use on Parker foundation fastener for sections. Does the odor of soap have any effect on the bees working on starter where it is used?

OHIO.

Answer.—(1) We give bees flour in the open, on sunny days, packed in shallow boxes, pressed tightly with the hands to keep the bees from drowning in it. A few old combs are sufficient to attract them there at first and after they have found the flour they come back to it. We have had hundreds of pounds taken in that way. But it does not last, only a few days in March before there is any pollen in the flowers. Some seasons it is not worth bothering with.

(2) We don't use soft soap for the purpose you mention, or at least not in quantity large enough to make it worth while to prepare special soap. The weakest kind of soap suds is sufficient.

HONEYFLOW CONDITIONS?

(1) Is there any way to tell by the action of the bees when the honeyflow is on, and can you tell me what time it would open here?

(2) Can one tell if bees are about to swarm by watching the entrance of the hive?

(3) I have four hives of bees on the south side of the house, and being as they are too close to a neighbor, I would like to move them to the north side of the house, about 200 yards. Will it be all right if there are no shade trees in the new location? Can I move them this fall? What do you think would be the best way?

NEBRASKA.

Answer.—(1) The best way to tell whether the honey crop is on is by looking inside of the hive. But the outside signs are especially noticeable—their busy workings and carrying in of honey. I do not know when the crop is to begin with you, but it will not be till plenty of blooming is on. You perhaps do not have white clover but you probably have sweet clover and that is sure to be a cause for honey yield.

(2) You cannot tell when bees are about to swarm by watching the hive on the outside. But if you will open the hive, you will notice queen cells, if they are preparing to swarm. When there are eggs or larvae in the cells, you may be sure they will swarm soon.

(3) You cannot move bees at this time of the year, without losing a great many. Better wait till fall or next spring. Close them up in the evening. Then change them to where you want them and disturb them greatly, so they may know something is wrong. Then release them by putting a piece of board slanting in front of the entrance, so they may know that they have to recognize the spot. A little care will do the work.

PACKAGE BEES

I am an old beekeeper but when it comes to package bees I am a beginner, and I would like to know how to put package bees into the hive. I have plenty of hives. Would it be all right if I put an empty hive body on the ground, open the package and set it in the empty hive, and set the hive with the brood frame and the caged queen suspended between the brood frames on top? Will the bees move up in the hive with the frames, or how should I go about it?

WISCONSIN.

Answer.—The method you suggest is all right.

Or if you prefer, you may take out enough frames from the hive, so as to be able to put the package of bees within it, leaving combs or frames full of foundation on one side. Then close the hive and let the bees leave their package and cluster upon the combs. After an hour or two you may remove the shipping box.

If you use the method you suggested, remove the extra hive as soon as the bees have all settled on the frames or the combs furnished to them. There is no need of giving them any feed until they have become well settled, so that there may be no robbing.

EXTRACTING COMBS AS BROOD COMBS

I have a number of full depth extracting combs or surplus combs, would you advise using these on new swarms, or would the bees make drone combs of them?

NEBRASKA.

Answer.—There is not the least danger of bees changing fully built worker combs into drone combs. But if you were to give them empty frames by the side of those worker combs, they would be sure to build drone combs in many of them.

DIFFERENCE IN CLOVERS

Is white clover and sweet clover the same?

CONNECTICUT.

Answer.—White clover and sweet clover are altogether different. Sweet clover is **Melilotus alba,** a tall plant growing to six feet or more and blooming most of the summer. It is good pasturage for stock after they get used to it, then they readily destroy it by grazing on it too closely. It is a very fertile plant and is good to recuperate soil that is washing.

White clover is a short clover that grows in pastures and is one of the best plants for honey.

Store Both Above and Below

It has been my experience removing bees from buildings, trees or any place they have taken possession of and where they have been free to build and store as they please, that they store both above and below.

Benj. Nielson,
Nebraska.

Demuth Memorial Meeting, Michigan August 1-2-3

August 1—Visit to the home apiary of Floyd Markham, Ypsilanti, all day. In the morning visiting and getting together, and looking over the apiary, honey house, etc. In the afternoon Mrs. Jensen from the American Honey Institute will speak, and E. R. Root will give reminiscences of George Demuth. In the evening Dr. P. A. Webber will give an illustrated lecture on the uses of honey.

August 2—Visit to the W. K. Kellogg plant, Battle Creek, with dinner there at noon. In the afternoon an open forum led by Miss Mary I Barber and Mrs. Jensen, with talks by Professor Lucas, of Michigan State College, on "Honey in Dairy Manufacture" and by Dr. E. F. Phillips, of Cornell University, on "Rural Russian Rambles." In the evening a drive to the home of Ralph Blackman, Portland, Michigan, for a picnic lunch and visit to his new honey house.

August 3—Grand Rapids, Pantlind Hotel. In the morning a visit to Jay Cowing, Jenison. In the afternoon, Dr. E. F. Phillips on "The Work of George Demuth." Open forum on organization led by Prof. H. F. Wilson, Dr. V. G. Milum, Charles Reese, Colin C. Lillie and others. R. H. Kelty will discuss "Would a Code of Ethics Help Beekeepers?"

August 4—For those who wish to go farther north into the playground of Michigan, a tour will be conducted through the fruit belt, and it is also **possible** that a Northern Michigan meeting will be held at Traverse City on that date.

R. H. Kelty,
Michigan.

California Takes the Palm from New York

Professor Rea, of Cornell, in the Journal, is authority for the statement that New York leads the United States in honey production with an average of 10,000,000 pounds per year.

"Economic Aspects of the Bee Industry" by Voorhies, Todd and Goldbraith says California production since 1927 is as follows: 1927—17,149,000; 1928—17,047,000; 1929—15,960,000; 1930—15,526,000; 1931—14,378,000; 1932—17,612,000.

I thought we folks in California were the worst boosters in the country. I think Rea has us beat.

H. Moore,
California.

Piatt County Loses Veteran

Scott Piatt, prominent farmer of Goose Creek Township, Piatt County, Illinois, died recently at his home as a result of complications. Mr. Piatt was a large farmer and beekeeping was a sideline. Nevertheless, he was enthusiastic and successful.

He never kept over 50 or 60 colonies but produced as high as 6000 sections one year. He was a straight comb honey man and president of the Piatt County Beekeepers' Association for two years and attended all meetings.

Piatt County has lost a good beekeeper and a good friend.

Willard W. Smith, Pres.,
Piatt County Beekeepers' Ass'n.

Tazewell County Meeting (Illinois)

The Tazewell County beekeepers met at the home of the Deputy Inspector for a pot luck supper and we want to say that our "queens" are not to be beaten when it comes to honey cooking. There were honey marshmallow cookies, cake, whole wheat bread, meat loaf, potato salad, noodles, chicken.

We were just about to eat when W. H. Williams, an old time bee expert and Justice of the Peace, called up to say he was about to marry a couple enroute to Wisconsin whom he had invited to come over to the bee meeting. The sixty beekeepers in attendance witnessed the ceremony and all wished the couple well and good.

The speakers were: I. E. Wilson, supervisor of the Cummings Estate; W. H. Williams, B. F. Bell, S. A. Tyler, W. S. Lohnes, Secretary of the Association.

Officers: President, Harvey Foote, Green Valley; Vice President, Oliver Price, Towns Acres; Secretary-Treasurer, Walter Scott Lohnes, 337 St. Mary, Pekin.

Secretary W. S. Lohnes.

Montgomery County Association Boosts Honey (Illinois)

On January 23 to 26, the Litchfield News-Herald and the Red and White stores held their second annual cooking school. The Montgomery County Association arranged for the display of honey and a demonstration of honey recipes. The school was in charge of Mrs. Eunice Larkin, Home Economics Expert of the Illinois Press Association. She conducts these schools for Press Association members in Illinois. Local associations will do well to work with her in any school held in their territories.

To have honey displayed and used, it is necessary to carry an advertisement in the newspaper holding the school. There are other expenditures, optional with the association.

The school at Litchfield gave fifty baskets of groceries as prizes. In each we had a five ounce jar of honey labeled "Compliments of the Montgomery County Beekeepers' Association." We gave one of these bottles to each employee on the newspaper staff. Mrs. Larkin used seven pounds of honey in her demonstrations.

We displayed one and three-pound jars of honey and cellophane wrapped comb sections, all bearing association label. A three-shelf easel stand was used, with canary yellow crepe paper covering it, on a four foot by three foot table, with the sides and top covered with the same paper. Below the front edge was a sign, "Display by members of Montgomery County Beekeepers' Association." Honey leaflets of the Institute with recipe request cards were on the table with a sign "Honey Recipes, Take One." The total cost in cash to the Association was about $15.00.

Members surrounding Litchfield report an increased interest and demand for honey ever since the school. Mrs. Larkin spoke a great deal about the use of honey all through the school. I send you clippings from the News-Herald with our advertisement and program. Honey date bars, I am told, were the hit of the school.

Wesley Osborn,
Secretary.

(The clippings mention honey in the news items, give a recipe for Honey Date Bars, and mention the display of the Association. The Association had a very good advertisement for honey, also in the Litchfield News-Herald.)

Cassia and Minidoka Counties (Idaho) Plan Picnics

The beekeepers of Cassia and Minidoka Counties, Idaho, have decided to resume the monthly business and picnic meetings which have been a feature of the association for the past several years. The first one will be in Burley at the home of Frank Beach. We are not advised of the date.

At this meeting, officers of the Association will be elected. E. R. Budge of Burley is president.

Glen Perrins,
Utah.

Cook-DuPage Meeting April 17th

The second meeting for 1934 of the Cook-DuPage, Illinois, beekeepers was held at Bismarck Hotel, Chicago, April 17th. The guest speaker was K. Hawkins of the G. B. Lewis Com-

pany. The next meeting will be at Downers Grove, Illinois, June 16.

Leroy Stockdale, Sec'y-Treas.,
Illinois.

Death of Adam Clark

Adam A. Clark, an early settler of Plymouth County, Iowa, died at his home April 28. Mr. Clark was born in England in 1851 and married there to Martha Cook. They came to this country in 1877 when LeMars was little more than a name for a town which was hoped to be. For many years Clark was prominent as a honey producer in northwestern Iowa and is well known to the bee men of that region.

Saginaw Valley Association (Mich.)

The Saginaw County Beekeepers' Association, meeting at the Court House in Saginaw, Michigan, January 12th, changed its name to the Saginaw Valley Beekeepers' Association and expanded the scope of the organization to include 15 counties. One vice-president was elected from each of the counties included in the new organization. The hope of the organization is to serve better the beekeepers of the counties included, through devising uniform methods of beekeeping and honey marketing in the state.

Prof. Kelty, of Michigan State College, and O. H. Schmidt, president of the Michigan Association, discussed the honey-marketing agreement. J. C. Kremer, of the State College, and C. D. Doane, Jr., State Apiary Inspector, spoke on bee diseases and apiary work of the past year. E. M. Hunt, of Lansing, spoke on the benefits to be derived from disease-free apiaries and how beekeepers may help themselves as well as the entire industry by supporting their fellow members and aiding them to attain more efficient methods and a higher standard of beekeeping.

The 75 beekeepers present, after careful consideration and a brief debate, voted to adopt the honey marketing agreement except the clause restricting increase to 5 per cent per year. Since the so-called agreement has to do primarily with uniform practices and minimum prices, it was the opinion of many that the agreement could more appropriately be called "a code of fair prices and practices."

D. L. Ulman, of Saginaw, was elected president and C. J. Frye, of Saginaw, secretary-treasurer. The vice-presidents from each county are: Joe Wright, Arenac County; Stewart Eddy, Bay; Ralph J. Sprenger, Clare; C. D. Doane, Genesee; M. Breault, Gladwin; Victor Harris, Gratiot; David Running, Huron; Roland Hornick, Isabella; Casper Blumer, Iosco; Arthur Thayer, Midland; Frank Stevens, Igemaw; M. K. Summers, Oscoda; W. L. Grauer, Saginaw; Wm. Manley, Sani-

lac; and G. J. Lengst, Tuscola County.

A quantity of honey in sections, jars, and pails was placed on display during the meeting and later turned over to the Saginaw Welfare Committee.

C. J. Frye,
Secretary-Treasurer.

New Address for Indiana Inspector.

The Chief Inspector of Apiaries and the Secretary of the Indiana State Beekeepers' Association have moved to new and comfortable quarters, 404 State Library Building, corner of Ohio and Senate Street, just across Senate Avenue from the State House. The latchstring is always out. Take the elevator to the fourth floor. Come up and see us some time.

Jas. E. Starkey,
Secretary.

Nebraska Meeting.

The annual meeting of the Nebraska Beekeepers' Association was held in Lincoln, Nebraska, January 3 and 4. Mr. F. N. Vodenhal of Ord, was elected President; Merritt Cook of Arlington, was named Vice-President; and Don Whelan of the Agricultural College was re-elected Secretary.

At this meeting it was suggested that CWA funds might be secured for carrying on bee inspection work this year in Nebraska. Mr. Vodenhal has requested each inspector to write to Governor Bryan asking that application be made to the Federal government for CWA funds for this work. He suggested also that each inspector reach as many beekeepers in his territory as possible, asking them to write to the Governor presenting their views. We have done this and await the verdict.

Benj. Nielsen.

Let's Not Call It Foulbrood

I have lost over 500 colonies in five years due to foulbrood. The word foulbrood hurts the sale of honey. I sell every drop of my tons each year to be eaten right around me. I know the idea that brood in local hives is sick hurts my sales and does not sound well.

Let's begin right here and now, to quit using the word "foulbrood." In inspecting I often look for old scale in the bottom of cells. Today this brought out a new term and why not use it at once? Scale, or American scale, brown or black scale, tight scale, hive scale, or comb scale for A. F. B.; and European scale or loose for E. F. B.? (Take your choice.)

To say one had hive scale would not sound bad (not bee brood scale); tight scale for A. F. B., loose scale for E. F. B. At any rate let's drop the word "foulbrood" at once and use words not so suggestive of something rotten and unfit to eat.

Leo F. Hannegan,
Hawaii.

Honor Roll

List of American Honey Institute Subscribers from April 1, 1933 to March 31, 1934

(Continued from May issue, page 225)

Illinois (continued)

E. J. Dahlquist, 4836 N. Kenneth, Chicago	1.00
John Fallas, Sesser	1.00
E. A. Cashman, Milwaukee Rd., Prairie View	1.00
Ed Gnitzinger, R.F.D. 2, Box 365, Des Plaines	1.00
Carl Bendor, Forest	1.00
H. J. Bryan, 1208 N. Market, Normal	1.00
W. H. Force, Champaign	1.00
J. N. Koritz, Buckley	1.00
O. R. Matthew, Virginia	1.00
Eleanor Nelon Simmer, 960 Beverly, Chicago	1.00
S. A. Tyler, San Jose	1.00
B. L. Maricle, Brighton	1.00
Alfred P. Johnson, R.F.D. 1, Rankin	1.00
M. G. Dadant, Hamilton	1.00
Edwin M. Stanton, Jr., 1030 Chas., Aurora	1.00
C. L. Duax, 3414 S. Western Ave., Chicago	1.00
Leo Retzinger, Happ Rd., Northbrook	1.00
Grant Graham, 1110 Marshall, Hillsboro	1.00
Harold W. Laughlin, Butler	1.00
Frank Zadel, Witt	1.00
A. Nord, Libertyville	1.00
Chas. Newman, Clearing Sta.	.50
R. M. Gober, R.F.D. 1, Oregon	.50
Mrs. C. G. Strieder Brimfield	.50
Miss Ann Krier, Des Plaines	.50
Ralph Annear, Mulkeytown	.25

Indiana

Walter A. Kuenzli, Servel nc., Evansville	$5.00
E. S. Miller, Valparaiso	5.00
Fred Sievert, Porter	3.00
H. H. Sigler, Ingalls	2.00
Harold L. Asher, 107 N. 17th St., Terre Haute	2.00
Wm. Spaulding, Marion	1.00
James E. Starkey, Indianapolis	1.00
Otto Bear, Milford	1.00
Clarence A. Dyer, R.F.D. 2, Carthage	1.00
Guy B. Falk, Bluffton	1.00
Haskett, the Bee Man, Westfield	1.00
Catalpa Grove Apiary, Galveston	1.00
Jay Smith, Vincennes	1.00
Grant E. Riddle, Box 54, Lakeville	1.00

Iowa

Edward G. Brown, Sergeant Bluff	$65.00
Kenneth Squires, Colorado	20.00
John G. Jessup, Council Bluffs	15.00
Roy Littlefield, Box 49, Exira	15.00
John Stoughton, Cherokee	13.00
W. P. Mann, Thurman	9.00
Carl Haag, Alton	9.00
Jos. Hermann, Manchester	7.20
Kalona Honey Company, Kalona	6.90
E. M. Cole, Audubon	5.00
L. G. Gartner, Titanka	4.40
Alfred Sader, Stratford	3.00
J. B. Gilbert, Larrabee	3.00
Forest Kuhlemeier, Nora Springs	3.00
Just A Beekeeper	2.50
Geo. Pohlemus, Ames	2.50
J. H. Conner, Ames	2.50
Ralph Wilson, Belmond	2.50
J. W. Stine, Burlington	2.00
Harvey F. Arns, Waverly	2.00
Snyder Apiaries, Anamosa	2.00
Harry Massure, Redfield	1.25
E. W. Ewell, 1020 W. 65th St., Des Moines	1.00
Homer Blackford, Marion	1.00
Wm. F. Ewinger, Burlington	1.00
Andrew Christensen, Dike	1.00
L. W. Mundehenke, Dubuque	1.00
C. W. Fitzsimmons, Mason City	1.00
Lester Diegel, Nora Springs	1.00
Earl Brittan, Ames	1.00
Mr. Kirkman	1.00
H. M. Purnell, Fairfield	1.00
F. D. Pfeffer, Hampton	1.00
A. A. Kirchgatter, St. Ansgar	1.00
Will H. Hogendorn, Colfax	1.00
Henry Smith, R.F.D. 3, Burlington	.50

Kansas

Clark Fulton, 827 S. A St., Arkansas City	$5.00
C. F. Schad, Vermillion	5.00
Rev. Clement Nordhus, Atchison	4.50
J. C. Dods, 3514 Knudson, Kansas City	3.25
Kansas State Agr. College, Dept. of Entomology, Manhattan	2.97
Claude Lane, Valley Falls	2.77
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(Honor Roll to be concluded in July issue)

New Beekeeping Publications

"Oregon Laws, 1933, Chapter 160." —recently passed beekeeping law. Copies may be had from the State Department of Agriculture at Salem, Oregon.

"The Treatment of American Foulbrood," by Jas. I. Hambleton, Farmers Bulletin 1713. Write U. S. Dept. of Agriculture, or your Senator or Representative. It is on sale by the Supt. of Documents, Washington, D. C., for 5 cents per copy.

"Honey Marketing in California," by Edwin C. Voorhies, Frank E. Todd, and J. K. Galbraith. Experiment Station Bulletin 554, Davis, California.

"Beekeeping Methods for Wisconsin," by H. F. Wilson, Circular 258, University of Wisconsin, Madison, Wisconsin.

"Honey Bees for Orchard Pollination," by George J. Abrams, Bulletin No. 69, University of Maryland, Extension Service, College Park, Maryland.

"The Comparative Value of Different Colonies of Bees for Fruit Pollination," by A. W. Woodrow, Memoir 147, published by Cornell University, Ithaca, New York.

"Beeekeeping in Oregon," Oregon Extension Bulletin 462, Corvallis, Oregon.—(From Oregon News Letter.)

New Book on Bumblebees

"Bumblebees and Their Ways" is the title of a new book by Dr. Otto Emil Plath of Boston University. It is published by the MacMillan Company of New York at $4.00.

For many years Dr. Plath has devoted much time in summer to a study of the habits of the bumblebees and this book contains the results of his observations.

One interesting observation is the manner in which skunks are able to destroy the nest and eat the bumblebees without an undue number of stings. He describes the rolling of the bees under the animals feet in much the same manner that writer of this review told the story of the skunk and the honeybee in the book, Romance of the Hive.

Dr. Plath has kept many little colonies of bumblebees in small boxes or hives in order to observe their habits and describes the manner of founding a colony to enable any nature lover to do it for himself.

The book describes at length the life history and habits of the common American species and is illustrated with numerous plates. Every student of insect life will find it of interest. It can be secured directly from the publishers at New York City.

Crop and Market Report

Compiled by M. G. Dadant.

For our June report we asked reporters to answer the following questions:

1. How is the honey crop so far?
2. Prospects for crop?
3. Winter loss and condition of bees?
4. Any honey left?

Honey Crop So Far

Naturally in most sections of the country, there has as yet been no honey crop. The southern sections are the only exception. Florida is having about a normal crop and in Georgia the weather is too dry. Mississippi and Alabama have not been flattered. In Louisiana, the crop is perhaps a little better than ordinary and Texas, although they have had no heavy surplus up to the date of writing this, are anticipating desirable results. In Arizona, the crop has not been heavy and in California the orange crop is much below ordinary with perhaps an average of 20 pounds per colony. Black sage is almost a failure owing to the drought. As a consequence, southern California is very much disappointed in the honey crop so far.

Throughout other sections of the country, although there has been very little surplus harvested, it does appear that the dry weather this year has been conducive to making every flower yield honey and as a consequence, the bees have been able to build up far better than they do in many seasons. Some reports are that the surplus was stored by colonies from both dandelion and fruit bloom.

In the northeast sections, we believe that prospects as far as honey flora is concerned are somewhat better than ordinary owing to the heavy snows last winter which put vegetation in good condition.

As we travel eastward, however, particularly after leaving Ohio, we find practically all of the Central West and into the plains states has been covered by heavy drought so that the prospects are unusually poor. This is particularly true in the white clover location because the drought last fall did not allow the young clover to grow and this spring it has added to the difficulties.

It is unusually satisfactory, however, to know that in practically all sections which have sweet clover to depend upon, sweet clover has come through the drought so far in very good condition and from what we have personally observed, there is more abundance of it in waste places than there has been in several years past.

Prospects for the Apalachian section seem about as usual. Georgia, however, is reporting another drought and Florida approximately the usual condition.

The balance of the South does not seem to have any unusual prospects except that Louisiana and Texas do seem to be better than ordinary.

One bright spot in the intermountain region is Colorado which has suffered for so many consecutive years. They seem to have better prospects this year and are much encouraged. In fact the entire intermountain territory looks favorable except for a possible lack of irrigation water.

The states of Washington, Oregon and northern California all have had very good rainfalls and prospects are unusually good as far down in California as Sacramento or a little below.

Winter Losses and Condition of Bees

Winter losses have been unusually heavy throughout the entire northeast section of the country. Many reports coming in state at least a 50 per cent loss, ranging down through the New England states, New York and into Pennsylvania and Ohio.

Similar reports are coming from many sections of Michigan where the long cold spell and big snows cause much loss on unprotected bees. This really extends throughout the entire northern section. Cellar wintered bees or well packed bees seem to have come through in very good average condition.

In the intermountain territory and southern plains states and in the Central West, losses do not seem to have been exceedingly severe. In the balance of the country, losses are about as ordinary.

As to the condition of bees, it is perhaps a little backward in the New England states and some northern sections but in most sections of the central belt, bees have come out wonderfully especially in view of the fact that there has been honey coming in from practically every minor source to help them build up. A number of reports, however, are to the effect that bees are getting so strong that undoubtedly they will use up their stores ahead of the major honeyflow and that feeding will be necessary or there will be many losses from starvation.

The bee disease situation does not seem to be improved over any previous year.

Honey on Hand

There will probably be as near a cleanup of honey this year as there has been in many years in the past. Buyers are still hunting around for honey to supply their wants. Many beekeepers also have had to go outside to secure more honey to take care of their customers and we have had reports in several instances of beekeepers and handlers of honey who are unable to supply the bakers with the products they wanted. This is an unfortunate condition.

As to the price on honey, this has advanced somewhat, particularly on the white grades although California is reporting that their orange honey is not moving out at any better price than it was previous to the new crop. This is somewhat strange, especially in view of the very short crop.

We believe that good white honey now could command a price of 6 cents at least f.o.b. shipping point and we know of some instances where 7 cents is being paid in 1000 pound lots. The cleanup should be thorough before the bulk of the new crop is received. We know of several beekeepers who have held their earlier crop, some as far back as 1927 who are disposing of their honey this year so that the cleanup in the country in general will be almost total except for a few lots held by beekeepers either for a better price or to take care of their customers throughout the summer and fall.

Summary

All in all, there will probably be a few less bees than last year to gather the honey crop and unless we get rains, there will be much less honey crop to gather. The white clover section, as a rule, will not have much chance unless they have sweet clover as a secondary crop consideration. California has a short crop with prospects poor and the extreme southwestern section similarly except perhaps the Imperial Valley. Texas looks like it would have more honey than usual with a far better demand so that undoubtedly they will use all of their own honey locally. We cannot see how honey can start on the new markets at any lower price than the old honey left off in view of the possibilities of a much shorter crop this year. As to what the crop will be depends entirely upon what the sweet clover sections do. Many of these sections are still extremely dry but sweet clover still does look good and if we have favorable weather, we may yet have a bountiful honey crop in all of those sweet clover sections which will largely help to make up the short crop in the white clover section. Our predictions, however, for today would be for a crop of honey not any larger than 1933 which was in itself not a very heavy one.

The BEEKEEPER'S EXCHANGE

Copy for this department must reach us not later than the fifteenth of each month preceding date of issue. If intended for classified department, it should be so stated when advertisement is sent.

Rates of advertising in this classified department are seven cents per word, including name and address. Minimum ad, ten words.

As a measure of precaution to our readers, we require references of all new advertisers. To save time, please send the name of your bank and other references with your copy.

Advertisers offering used equipment or bees on combs must guarantee them free from disease, or state exact condition, or furnish certificate of inspection from authorized inspector. Conditions should be stated to insure that buyer is fully informed.

BEES AND QUEENS

BUY THE BEST package bees and queens for 1934. We have them. Vigorous, gentle, disease resistant, three-banded Italians. Best honey producers. Write for information and prices. H. C. Short, Fitzpatrick, Alabama.

CAUCASIANS — Northern bred, shipments June 1st. Twenty-four hour service, satisfaction guaranteed. Code Prices.
Russell-Barnes Apiaries, Morrill, Nebr.

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C. B. Bankston, Buffalo, Texas.

ITALIAN Queens and Caucasian the very best strains, that are reared right from a breeder of 50 years' experience. Code prices: 1-9, 70c; 10-24, 65c; 25-49, 55c; 50 or more, 50c.
Daniel Wurth, Toppenish, Wash., Rt. No. 1.

ITALIAN Queens. Northern bred, for Northern conditions.
Eugene Gordon, North Platte, Nebraska.

TRY the Simmons Queens and be convinced there are none better, the bright yellow Italians. They have satisfied hundreds; they will satisfy you. They get results. 1 to 9, 70c each; 9 to 24, 65c each. E. A. Simmons Apiaries, Powell Owen, Mgr., Greenville, Ala.

GOLDEN Italian Queens that produce good workers, gentle to handle, not bad to swarm, at code prices. Untested, one to nine, 70c each; ten to twenty-four, 65c each. Tested, $1.40. Select tested, $2.00.
D. T. Gaster, Rt. 2, Randleman, N. C.

"SHE-SUITS-ME" queens. Prices after May 31, 80c per queen; 6 for $4.50. 12 for $8. Linebred, three-banded stock.
Allen Latham, Norwichtown, Conn.

ETRA YELLOW ITALIAN QUEENS—Over 16 years a breeder. It takes quality to stand competition so many years. Code price on untested. 1 to 9, 70c each; 10 to 24, 65c each; 25 to 49, 55c each; 50 or more, 50c each. Health certificate and satisfaction. Ask for circular. Hazel V. Bonkemeyer, Rt. 2, Randleman, N. C.

HONEY PRODUCING QUEENS—Old Three-Banded Italians, reared from the best stock, by one of America's best queen breeders of really quality queens, at CODE prices. T. W. Burleson & Son, Waxahachie, Texas.

CAUCASIAN BEES will increase your honey production and winter better. Caucasian Queens, 1 to 9, 70c each; 10 to 24, 65c each; 25 to 49, 55c each; 50 or more, 50c each. Package bees at code prices.
P. B. Skinner Bee Co., Greenville, Ala.

QUALITY ITALIAN QUEENS—Reared in the mountains to produce the hardiness of the North. Prices, 1 to 9, 70c; 10 to 24, 65c; 25 to 49, 55c; 50 to 99, 50c; 100 to 249, 45c; 250 or more, 42½c. Mt. Lassen Honey Co., C .G. Wenner, Mgr., Paynes Creek, Calif.

MOUNTAIN GRAY Caucasian Queens. After June 1st and later delivery, untested queens, 1 to 9, 70c; 10 to 24, 65c; 25 to 49, 55c; 50 or more, 50c each. Package bees for June at code price. Safe arrival and satisfaction. Tillery Bros., Greenville, Ala.

SEE OUR DISPLAY AD for prices on queens. Reared by our improved system. Circular tells about it.
J. F. Diemer Company, Liberty, Mo.

PURE Italian Queens, good producers and gentle, one to nine 70 cents, ten to twenty-four 65 cents; twenty-five to forty-nine 55 cents. A. M. Kelly, Bell, Florida.

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NORTHERN Caucasian Queens are gentle, vigorous, prolific, bred right and personally reared. They produce hordes of bees that get the honey. 20 up, 75c; less than 20, 80c. No packages.
Bird's Apiaries Odebolt, Iowa.

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FOR SALE—Northern white, extracted and comb honey. M. W. Cousineau, Moorhead, Minn.

HONEY FOR SALE—Any kind, any quantity. The John G. Paton Company, 230 Park Avenue, New York.

FOR SALE—Well ripened clover honey, carlot or local shipments. Will be pleased to submit sample. Also new crop section comb honey, in carrier crates of four or eight cases. The Colorado Honey Producers' Association, Denver, Colorado.

FINE QUALITY ORANGE, palmetto and mangrove honey in new sixties. Sample 6c. Peter W Sowinski, Ft. Pierce, Florida.

WHITE clover extracted honey. Write for prices and sample.
Kalona Honey Co., Kalona, Iowa.

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WANTED—HONEY and BEESWAX. Beekeepers will find it to their advantage to communicate with us. Please send samples, state quantity available and prices. CALIFORNIA HONEY COMPANY, Hamilton & Company, Agents, 108 W. Sixth Street. Los Angeles, California.

WANTED—Car lots honey; also beeswax, any quantity. Mail samples, state quantity and price. Bryant & Cookinham, Inc., Los Angeles, Calif.

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Sherman Whitney, Puyallup, Wash.

FOR SALE

FOR SALE—Machine for making sections. A bargain. Rettig Supply Co., Wabash, Ind.

ROOT 4-frame hand (automatic reverse) extractor, 9½" baskets, in good condition, $30.00. John Kneser, Hales Corners, Wis.

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FARMERS WANTED, age 18 to 50, to qualify for Government Meat Inspectors and other suitable Federal Positions; Commence $105 to $200 month. Valuable information Free. WRITE IMMEDIATELY, Instruction Bureau, 244, St. Louis, Mo.

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The POSTSCRIPT

GOSSIP ABOUT THE OFFICE IN THE MAKING OF THE MAGAZINE

Probably the first queens to be sent through the mails were sent by C. J. Robinson of Richfield, New York, to Rev. L. L. Langstroth, in 1863. Langstroth credited Wm. W. Cary of Coleraine, Mass., with being the first to send a queen across the ocean in a single frame nucleus with a few worker bees. The queen was sent to Mr. Woodbury of Exeter, England, and arrived in fine condition. At that time many attempts to import queens from abroad were ending in near failure since most of the queens were dead on arrival. It is hard for us to appreciate how much of trial and error entered into the development of our present day practice.

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It seems to me that the most logical and direct method of helping to meet the problems of the meat producers is for the government to curtail grazing in the national forests and thus preserve these areas for the purpose for which they are intended. Over-grazing is destroying the young trees, causing erosion to an untold extent and producing meat animals not now in demand in the markets. If Uncle Sam will withdraw some of his own acres from production there will be less need of providing a subsidy to encourage farmers to reduce their livestock. It is a painful experience for a nature lover to visit some of the remote spots in the national forests and see the extent to which the wild flowers and ground covers have been destroyed by grazing animals on land which is presumed to be protected for the benefit of future generations.

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The editor of a well known magazine of national circulation recently received a letter from a subscriber asking whether it would be contrary to law to feed the bees sugar to be stored in the combs and sold as honey. Regardless of the law, one who tried such a stunt would find it unprofitable, for the sugar-honey thus secured would cost the bee man far more than it would bring in the market.

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In the middle west we are having the driest spring in the history of the weather bureau. Less than one third of normal moisture has fallen, and beekeepers are apprehensive. Fortunately sweet clover which is our principal source of nectar is drought resistant and will yield a crop with less rainfall than any other important honey plant common to this region. Perhaps by time this appears in print the change may come and rains may come again.

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A new house is nearing completion at the Pellett farm. It is something long planned and built to serve the special needs of a garden farm. There is a large basement to provide storage and working space for winter activities. At that, I miss the old house which was plain and small and lacked modern conveniences. There are many pleasant memories connected with the old place.

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William Spring of Manchester, New Hampshire, calls my attention to the fact that sourwood belongs to the same family as clethra and should succeed on soils where clethra does well. He is probably right unless sourwood suffers from winter injury in the colder climate. There is a real need for more information regarding the adaptability of honey plants suited to acid soils.

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In early editions of his book Langstroth wrote: "No apiarian ought ever to encourage the destruction of birds, because of their fondness for his bees. Unless we can check the custom of destroying on any pretense our insectivorous birds * * * we shall lament, more and more, the increase of insects, from whose ravages nothing but these birds can protect us." His prophecy is realized. In spite of all the applications of poison and the best endeavors of an army of entomologists, insect pests are increasing at an alarming rate.

Among the most useful books to come to my attention are the "Plant Pest Handbooks" issued by the Agricultural Experiment Station at New Haven, Conn. There are two, one dealing with insects and the other with diseases. All common cultivated plants are listed in alphabetical order with the pests and remedies described in detail. Every gardener will appreciate these bulletins which are issued for free distribution to residents of that state. The two volumes contain more than 300 pages.

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N. E. France of Wisconsin was among the first to experiment with formaldehyde in the treatment of American foulbrood. About thirty years ago he proved rather definitely that the fumes would not penetrate the wax cappings. In 1906, Dr. G. F. White published some results in which he found that it was a good disinfectant but penetrated slowly. By the time that Hutzleman, Sturtevant, Vansell and Jay Smith began their experiments in the treatment of combs the work of these others was well nigh forgotten. With all the efforts to date, American foulbrood still remains to be conquered.

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When Italian bees were still a novelty, A. I. Root hit on the idea of selling eggs of the new race. In 1873 he advertised to send a piece of comb containing newly laid eggs from an imported Italian queen for twenty-five cents. The scheme did not succeed very well since the eggs did not retain their vitality when two or more days were necessary to reach the customer. Buyers who lived near at hand, however, did rear good queens from the eggs received in this manner.

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In the British Bee Journal there is an occasional reference to "ragwort" honey. The plant which we know as ragwort is so scarce in this region that it would be hard to find enough plants to keep even one bee busy to say nothing of enough to produce any honey.

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I note that one Belgian manufacturer offers foundation with cells of four different sizes. One cannot but wonder just what advantage can come from so many different sizes. Occasionally some beekeeper wants foundation of the drone cell size for use in supers, but why he should want three different sizes for worker cells except for experiment is beyond me.

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Doctor Tinker of Ohio, who was a leader among the bee men of fifty years ago abandoned the practice of his profession because of deafness and turned to beekeeping instead. Tinker became well known among the bee men of his time but is remembered principally because of his contribution to the development of the queen excluder. He made the excluders with alternate strips of wood and queen excluding zinc which were long used so generally.

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I have just been asked to talk to a class of youngsters on the advantages of beekeeping as an occupation. Some teachers now-a-days try to give their students a glimpse of many different occupations. I told them that from my standpoint the chief attractions are that one can begin with a small investment and grow up with the business and that one can make his living in the open air with most of his work to be done in nice weather. What is it about the business that attracts you?

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As this is written on May 18 there is a honeyflow on from black locust. Locust blooms for only a short time and the crop is usually disappointing for this reason but coming so early it is of more value than usually recognized. The general planting of this tree by the men employed on government projects will provide much bee pasture in years to come.

FRANK C. PELLETT.